

A STUDY ON THE SYMPTOMATOLOGY AND DIAGNOSTIC METHODOLOGY OF NETRISOOLAI VATHAM



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October - 2018

DECLARATION BY THE CANDIDATE

I hereby declare that this Dissertation entitled “***A STUDY ON THE SYMPTOMATOLOGY AND DIAGNOSTIC METHODOLOGY OF NETRISOOLAI VATHAM***” is a bonafide and genuine research work carried out by me under the guidance of Dr. G. J. Christian M.D (S), HOD, Dept of Noi Naadal, National Institute of Siddha, Chennai – 47, and the dissertation has not formed the basis for the award of any other degree, Diploma, Fellowship or other similar title.

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1. INTRODUCTION

Siddha system of medicine is an integrated part of Indian system of medicines which is very potent and peculiar in its own way, by providing healing of the body, mind and soul. Siddha is the first system to emphasis health, as a perfect state of physical, psychological social and spiritual component of human being. According to Siddha our body is constituted by three humours Vali, Azhal and Iyyam (Vatham, Pitham and Kapham respectively). The maintenance of its normal proportion gives vitality to the organs or it regulates all vital functions of the body and assures the longevity of life. When there is any derangement in the ratio it will lead to diseases.

Fundamentals of human body composed of uyirthathu, udalthathu, panchabhootham. Any alteration in these principles can result in disease which is revealed in humours like Vali, Azhal, Iyam. Humoural basis of disease diagnosis is needed to select humour based treatment, which can result in better prognosis. The diagnosis of a disease and eliciting the origin for the ailment is very important for a physician before selecting medicines for the ailment. The diagnosis of the disease involves identifying its causes and pathology of the disease. This is well defined by Sage Thiruvalluvar as follows:

"நோய் நாடி நோய்முத னாடி யதுதணிக்கும்
வாய்நாடி வாய்ப்பச் செயல்"

Sage Yugi classified the diseases on the basis of symptomatology in Yugi Vaidhya Chinthamani. Yugimuni was the first person to classify diseases based on clinical signs and symptoms. His classification of diseases are very clear and are followed by Siddha physicians even today. Yugi Vaidya Chinthamani describes about 80 types of Vatha diseases, 40 types of Pitha diseases and 20 types of Kapha diseases.

Netrisoolaivatham is one among the eighty types of Vatha diseases mentioned by Sage Yugi in Yugi Vaidya Chinthamani, as a clinical condition characterized by Pain in between the eyebrows, forehead and nose, throat pain, weariness of the body, giddiness, fatigue, and head ache.

The signs and symptoms of Netrisoolai Vatham mentioned in Siddha literature may be correlated to Frontal sinusitis in Modern disease of classification. The comparative studies of diseases in Siddha System of Medicine bring to light high level of medical knowledge and wisdom the Siddhars had at that time.

Sinusitis is a major health care issue that affects a larger proportion of population. This is a common condition, affecting approximately 30% of the world population. Approximately 0.5% of all upper respiratory tract infections are complicated by sinusitis. More than 120 million Indians suffer from atleast one episode of sinusitis each year. One in eight Indians suffer from chronic sinusitis caused by inflammation of the nasal and throat lining, which results in accumulation of mucus in sinus cavity and pressure build up in face, eyes and brain. If the sinusitis is not treated properly it leads to many complications like orbital cellulitis, osteomyelitis and fistula formation of frontal bone, meningitis and brain abscess.

The author wants to elaborate on Netrisoolai Vatham mentioned in Siddha literature, to get a better insight and scientific explanation of the disease. This study might form the basis to evaluate the diagnostic methodology, line of treatment, dietary regimen, life style modification and management of Netrisoolai Vatham.

2. AIM AND OBJECTIVES

2. 1. AIM

To conduct a study on Netrisoolai Vatham as mentioned in Yugi Vaidya Chinthamani, there by to evolve a diagnostic methodology for Netrisoolai Vatham in Siddha system of medicine.

2. 2. OBJECTIVES :

2. 2. a. PRIMARY OBJECTIVE :

To evaluate the diagnostic methodology and symptomatology of Netrisoolai Vatham through Envagaithervu, Kaalam, Nilam and Manikadai Nool.

2. 2. b. SECONDARY OBJECTIVES :

- To collect literary evidences about Netrisoolai Vatham .
- To study the detailed etiological factors of Netrisoolai Vatham .
- To find out the changes of Udal Thathu and Uyir Thathu in the condition of Netrisoolai Vatham.
- To analyse the signs and symptoms of Netrisoolai Vatham .
- To correlate the symptoms of Netrisoolai Vatham with that of closely resembling conditions in modern medical literature.
- To have an idea of incidence of the Netrisoolai Vatham with reference to sex, age and habit.
- To standardize the line of treatment for Netrisoolai Vatham .
- To recommend a dietary regimen for Netrisoolai Vatham.

3. REVIEW OF SIDDHA LITERATURE

3. A. SUGARANA NILAI IN SIDDHA MEDICINE (PHYSIOLOGY)

The five basic elements, namely Aagayam (Space), Kaal (Air), Thee (Fire), Neer (Water), and Mann (Earth) are the building blocks of all the physical and subtle bodies existing in this whole universe. These are called as the ‘Adippadai boothams’ (Basic Elements) or ‘Panchaboothams’.

These five elements together constitute the human body and origin of other material objects are explained as Pancheekaranam (Mutual Intra Inclusion). None of these elements could act independently by themselves. They could act only in co-ordination with other four elements. All the living creatures and the non-living things are made up of these five basic elements.

உலகம் பஞ்ச பூதம்

"நிலம் நீர்தீவளி விசும்போடைந்தும்
கலந்தமயக் கமுலகம் மாதலின்"

- தொல்காப்பியம்

தேகம் பஞ்ச பூதம்

"தலங்காட்டி இந்தச் சடமான ஐம்பூதம்
நிலங்காட்டி நீர் காட்டி நின்றிடுந் தீ காட்டி
வலங்காட்டி வாயுவால் வளர்ந்தே இருந்தது
குலங்காட்டி வானில் குடியாய் இருந்ததே"

- பதினென் சித்தர் நாடி சாஸ்திரம்

As per the above lines, the universe and the human body are made of five basic elements.

3. A. a. THE 96 BASIC PRINCIPLES (96 THATHUVAM) :

According to Siddha system of medicine, ‘Thathuvam’ is considered as a science that deals with basic functions of the human body. Siddhars described 96 principles as the basic constituents of human body that include physical, physiological, psychological and intellectual components of an individual. These 96 Thathuvams are considered to be the cause and effect of our physical and mental well-being.

i. BOOTHAM – 5 (ELEMENTS) :

- Mann - Earth
- Neer - Water
- Thee - Fire
- Vaayu - Air
- Aagayam - Space

ii. PORI -5 (SENSORY ORGANS) :

- Mookku (Nose) - It is a component of Man bootham
- Naakku (Tongue) - It is a component of Neer bootham
- Kan (Eye) - It is a component of Thee bootham
- Thol (Skin) - It is a component of Vaayu bootham
- Kadhu (Ear) - It is a component of Aagayam bootham

iii. PULAN -5 (FUNCTIONS OF SENSORY ORGANS) :

- Nugarthal - Smell - It is a component of Man bootham
- Suvaithal - Taste - It is a component of Neer bootham
- Paarthal - Vision - It is a component of Thee bootham
- Thoduthal - Touch - It is a component of Vaayu bootham
- Kettal - Hearing - It is a component of Aagayam bootham

iv. KANMENTHIRIYAM – 5 (MOTOR ORGANS) :

- Vaai (Mouth) - The speech occur in relation with Space element
- Kaal (Leg) - The walking take place in relation with Air element
- Kai (Hands) - Giving and taking are carried out with Fire element
- Eruvai (Rectum) - The excreta is removed in association with Water element
- Karuvai (Genital organ) - Sexual acts are carried out in association With Earth element.

v. KARANAM – 4 (INTELLECTUAL FACULTIES) :

- Manam - Thinking about a thing
- Bhuddhi - Deep thinking or analyzing of the thought
- Siddham - Determination to achieve it
- Agankaaram - Achievement faculty

vi. ARIVU – 1 (WISDOM OF SELF REALIZATION)

To analyse good and bad

vii. NAADI -10 (Channels of Life Force responsible for the Dynamics of Pranan)

- Idakalai - Starts from the right big toe and ends at the left nostril.
- Pinkalai - Starts from the left big toe and ends at the right nostril.
- Suzhumunai - Starts from moolaathaaram & extend upto centre of head.
- Siguvai - Located at the root of tongue, helps in swallowing food.
- Purudan - Located in right eye.
- Kanthari - Located in left eye.
- Aththi - Located in right ear.
- Alambudai - Located in left ear.
- Sangini - Located in genital organs.
- Gugu - Located in anorectal region.

viii. VAAYU – 10 (Vital nerve force which is responsible for all kinds of movements)

• **PRANAN (UYIR KAAL) :**

This is responsible for the respiration of the tissues, controlling knowledge, mind and five sense organs and digestion of the food taken in.

• **ABANAN (KEEL NOKKU KAAL) :**

It lies below the umbilicus. It is responsible for the downward expulsion of stools and urine, ejaculation of semen and menstruation.

• **VIYANAN (PARAVU KAAL) :**

This is responsible for the motor and sensory functions of the entire body and The distribution of nutrients to various tissues.

• **UTHANAN (MAEL NOKKU KAAL) :**

It originates at utharakini. It is responsible for digestion, absorption and distribution of food. It is responsible for all the upward movements.

- **SAMANAN (NADUKKAL) :**

This is responsible for the neutralization of the other 4 valis i.e. Pranan, Abanan, Viyanan and Uthanan. Moreover it is responsible for the nutrients and water balance of the body.

- **NAAGAN :**

It is a driving force of eye balls and responsible for their movements.

- **KOORMAN :**

It is responsible for the opening and closing of the eyelids and also vision. It is responsible for yawning.

- **KIRUKARAN :**

It is responsible for the salivation of the tongue and also nasal secretion.

Responsible for cough and sneezing and induces hunger.

- **DEVATHATHAN :**

This aggravates the emotional disturbances like anger, lust and frustration etc. As emotional disturbance influence to a great extent the physiological activities, it is responsible for the emotional upsets.

- **DHANANCHEYAN :**

Expelled after 3 days of death by bursting out of the cranium. It is responsible for edema, plethora and abnormal swellings in the body in the pathological state.

ix. ASAYAM – 5 (VISCERAL CAVITIES) :

- **Amarvasayam** (Reservoir organ): Stomach (digestive organ). It lodges the ingested food.
- **Pakirvasayam** (Digestive site): Small intestine. The digestion of food separation and absorption of saaram from the digested food are done by this asayam.
- **Malavasayam** (Excretory organ for the solid waste): Large Intestine, especially rectum. Responsible for the expulsion of undigested food parts and flatus.
- **Salavasayam** (Excretory organ for the liquid waste): Urinary bladder, kidney. Responsible for the formation and excretion of urine.
- **Suckilavasayam** (Genital organs): Place for the formation and growth of the sperm and ovum.

x. KOSAM – 5 (FIVE STATES OF THE HUMAN BODY OR SHEATH) :

- Annamaya Kosam - Physical Sheath (Gastro intestinal system)
- Prnamaya Kosam - Respiratory Sheath (Respiratory system)
- Manomaya Kosam - Mental Sheath (Cardio vascular system)
- Vignanamaya Kosam - Intellectual Sheath (Nervous system)
- Aananthamaya Kosam - Blissful Sheath (Reproductive system)

xi. AATHARAM – 6 (STATIONS OF SOUL) :

- **MOOLADHARAM :**

Situated at the base of the spinal column between genital organ and anal orifice. Letter “ॐ” is inscribed.

- **SWATHITANAM :**

Located 2 finger breadths above the Mooladharam, (i.e) between genital and naval region. Letter “८” is inscribed.
Earth element attributed to this region.

- **MANIPOORAGAM :**

Located 8 finger breadths above the Swathitanam, (i.e) at the naval center. Letter “५” is inscribed. Element is Water.

- **ANAKATHAM :**

Located 10 finger breadths above Manipooragam, (i.e) location of heart. Letter “३” is inscribed. Element is Fire

- **VISUTHI :**

Located 10 fingerbreadths above the Anakatham (i.e) located in throat. Letter “५” is inscribed. Element is Air.

- **AAKINAI :**

Located between two eyebrows. Element is Space. Letter “५” is inscribed.

xii. MANDALAM- 3 (REGIONS) :

- **Thee Mandalam (Agni Mandalam) Fire zone**

Fire Region, found 2 fingers width above the Mooladharam.

- **Gnayiru Mandalam** (Soorya Mandalam) Solar zone
Solar Region, located with 4 fingers width above the umbilicus.
- **Thingal Mandalam**(Chandra Mandalam) Lunar zone
Lunar Region, located at the center of two eye brows.

xiii. MALAM – 3 (THREE IMPURITIES OF THE SOUL) :

- **AANAVAM :**
This act makes clarity of thought, knowing the power of the soul, yielding to the Egocentric consciousness like ‘I’ and ‘Mine’ considering everything is to his Own. (Greediness)
- **KANMAM :**
Goes in collusion with the other two and responsible for incurring paavam (the Sin) and Punniyam (virtuous deed/Sancity)
- **MAYAI :**
Claiming ownership of the property of someone else and inviting troubles.

xiv. THODAM – 3 (THREE HUMOURS) :

- **VALI (VATHAM)**
It is a creative force, formed by Vaayu & Aakaya bootham.
- **AZHAL (PITHAM)**
It is a protective force, formed by Thee bootham
- **IYYAM (KABAM)**
It is a destructive force, formed by Mann & Neer bootham

xv. EADANAI - 3 (PHYSICAL BINDINGS) :

Materialistic affinity Sibbling / Familial bonding

- **Porul patru** - Materialistic affinity.
- **Puthalvar patru** - Sibbling / Familial bonding.
- **Ulaga patru** - Worldly bindings.

xvi. GUNAM – 3 (THREE COSMIC QUALITIES) :

- **Sathuva Gunam (*Characters of Renunciation or Ascetic Virtues*) :**

The grace, control of sense, wisdom, penance, generosity, excellence, silence and truthfulness are the eight qualities attributed to the benevolent trait.

- **Raso Gunam (*Characters of Ruler*) :**

Enthusiasm, wisdom, valour, virtue/penance offering gift, art of learning and listening are the 8 traits.

- **Thamo Gunam (*Carnal and Immoral Characters*) :**

Immortality, lust, killing, laziness, violation of justice, gluttony, falsehood, forgetfulness and fraudulence etc.

xvii. VINAI – 2 (ACTS) :

- **Nalvinai** - Good Acts (Meritorious acts)
- **Theevinai** - Bad Acts (Sinful acts)

xviii. RAGAM – 8 (THE EIGHT PASSIONS) :

- **Kaamam** - Desire
- **Kurotham** - Hatred
- **Ulobam** - Stingy
- **Moham** - Lust (Intense or Sexual desire, infatuation)
- **Matham** - Pride (The feeling of respect towards oneself)
- **Marcharyam** - Internal conflict, Envy
- **Idumbai** - Mockery
- **Ahankaram** - Ego

xix. AVATHAI – 5 (FIVE STATES OF CONSCIOUSNESS) :

- **NINAIVU** - Awakened state (*Sakkiram*)

This state exists between the eye-brows. The four strengths, the five senses, the five actions (*Asayam*) and the four *Andhakaranas* are active in this state.

- **KANAVU** - Dream state (*Swappanam*)

Dream state is one in which the five senses and five actions lie dormant at Adam's apple (Throat).

- **URAKKAM** - Sleeping state (*Suzhuthi*)
This is the state in which the Anthakaranas are associated with soul but these could not be expressed to others and its seat being thorax.
- **PERURAKKAM** - Deep sleep (*Turiyam*)
The seevathma, along with wisdom lies at the navel region, here respiration takes place.
- **UYIRPADAKKAM** - Immersed state of seevathma (*Turiyatheetham*)
The seevathma is deeply immersed in the moolathara without the awareness of impurity (malam), sloth (Mantham), delusion (maya) and other sense of touch.

3. A. b. THE UYIR THATHUKKAL :

The physiological units of the Human body are **Vali** (Vatham), **Azhal** (Pitham) and **Iyyam** (Kabam). They are also formed by the combination of the five elements

Vatham	=	Vali+Aagayam	- Creative force
Pitham	=	Thee	- Force of preservation
Kabam	=	Mann+Neer	- Destructive force

As per the above lines the Universe and the human body are made of elements. If these three humours are in the ratio 1:½:¼ in equilibrium or in the normal condition, they are called as the Life forces.

i. SITES OF UYIR THATHUKKAL :

"பொங்கிய தைந்துக்குள் பொல்லாதது இம் மூன்றுதான்
தங்கிய வாயு சமத்தன் மகாவாதம்
பங்கிய வன்னியால் பகுந்தது பித்தமே
பகுந்த சலத்தில் பரிசிக்கும் நல்லையும்
வகுந்த இம்மூன்றால் வளர்ந்தது நோயெல்லாம்
அகுந்தது தானறிந்து அளவிட்ட யோகிகள்
மகிழ்ந்தே யிதில் நின்ற மயக்கம் அறிவாறே"

- பதினென் சித்தர் நாடி சாஸ்திரம்

ii. THE FORMATION OF UYIR THATHUKKAL

மூவகை நாடியும் உயிர் தாதுவும்

"தாது முறையே தனிஇடை வாதமாம்
போதுறு பின்கலை புகன்றது பித்தமாம்
மாது சுழுமுனை வழங்கிடும் ஐயமாம்
ஓது முறை பார்த்து உணர்ந்தவர் சித்தரே"

- பதினென் சித்தர் நாடி சாஸ்திரம்

மூவகை வாயுவும் உயிர் தாதுவும்

"உணர்ந்த அபானன் உறும் அந்த வாதத்தில்
புணர்ந்த பிராணன் புகும் அந்தப் பித்தத்தில்
அணைந்த சமானன் அடங்கும் கபத்தோடு
இணைந்திவை மூன்றுக்கு எடுத்த குறி ஒன்றே"

- பதினென் சித்தர் நாடி சாஸ்திரம்

Vali = Abanan + Idagalai
Azhal = Piranan + Pinkalai
Iyyam = Samanan + Suzhumunai

I.VALI (VATHAM) :

a) THE NATURE OF VALI :

Vali is soft, fine and the temperature (coolness and hotness) could be felt by touch.

b) SITES OF VALI :

"நெளிந்திட்ட வாதமபானத்தைப் பற்றி
நிறைந்திடையைச் சேர்ந்துந்திக் கீழே நின்று
குளிந்திட்ட மூடமதூா டெழுந்து காமக்
கோடியிடையைப் பற்றியெழுங் குணத்தைப் பாரே
நிணமான பொருத்திடமும் ரோமக் காலும்
நிறைவாகி மாங்கிசமெல் லாம்பரந்து"

- வைத்திய சதகம்

According to Vaithya sathakam, Vali dwells in the following places: They are Umbilicus, rectum, faecal matter, abdomen, anus, bones, hip joint, navel plexus, joints, hair follicle and muscles.

"அறிந்திடும் வாத மடங்கு மலத்தினில்"

- திருமூலர்

"நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்
நாபிக்குக் கீழென்று நவில லாகும்"

- யுகி முனிவர்

According to Sage Thirumoolar and Yugi muni, the places of vatham are the anus and the region below the naval.

c) THE PROPERTIES OF VALI :

“ஒழுங்குடனே தாதேழ் மூச்சோங்கி இயங்க
எழுச்சிபெற எப்பணியுமாற்ற எழுந்திரிய
வேகம் புலன்களுக்கு மேவச் சுறுசுறுப்பு
வாகளிக்கும் மாந்தர்க்கு வாயு”

- சித்த மருத்துவாங்க சுருக்கம்

d) THE FUNCTIONS OF VALI :

1. To stimulate the respiration
2. To activate the body, mind and the intellect.
3. To expel the fourteen different types of natural reflexes.
4. To activate seven physical constituents in functional co- ordination.
5. To strengthen the five sense organs.

In the above process vatham plays a vital role to assist the body functions.

II. AZHAL (PITHAM) :

a) THE NATURE OF AZHAL :

The nature of Azhal is atomic. It is sharp and hot. The ghee becomes watery, salt crystallizes and jaggery melts because of heat. The heat of Azhal is responsible for many actions and their reactions.

b) SITES OF AZHAL :

“தானான பித்தம் பின் கலையைப் பற்றிச்
சாய்வான பிராணவாயு வதனைச் சேர்ந்து
ஊனான நீர்ப்பையி லணுகி மூலத்
துதித்தெழுந்த வக்கினியை யுறவு செய்து

மானேகே ளிருதயத்தி லிருப்பு மாகி

கோனான சிரந்தனிலே யிறக்க மாகி

கொண்டுநின்ற பித்தநிலை கூறி னோமே”

-வைத்திய சதகம்

According to vaithiya sathagam, the pingalai, urinary bladder, stomach and heart are the places where Azhal sustains. In addition to the above places, the umbilicus, epigastric region, stomach, sweat, saliva, blood, essence of food, eyes and skin are also the places where Azhal sustains. Yugi muni says that the Azhal dwells in urine and the place below the neck.

c) THE CHARACTERS OF AZHAL :

Azhal is responsible for the digestion, vision, maintenance, of the body temperature, hunger, thirst, taste etc. Its other functions include thought, knowledge, strength and softness.

d) THE FUNCTIONS OF AZHAL :

1. Maintenance of body temperature.
2. Produces reddish or yellowish colour of the body.
3. Produce heat energy on digestion of food.
4. Produces sweating.
5. Induces giddiness.
6. Produces blood and the excess blood are let out.
7. Gives yellowish coloration to the skin, eyes, faeces and urine
8. Produce anger, heat, burning sensation, inaction and determination.
9. Gives bitter or sour taste.

e) THE TYPES OF AZHAL :

1. Aakkanal – Anal pitham or Pasaka pitham – The fire of digestion.

It lies between the stomach and the intestine and causes digestion and dries up the moist ingested substance.

2. Vanna eri – Ranjaga pitham – Blood promoting fire.

The fire lies in the stomach and imparts red colour to the chyme and produces blood. It improves blood.

3. Aatralanki – Saathaga pitham – The fire of energy.

It gives energy to do the work.

4. Nokku Azhal – Alosaga pitham – The fire of Vision.

It lies in the eyes and causes the faculty of vision. It helps to visualize things.

5. Ul oli thee – Prasaka pitham – the fire of brightness.

It gives colour, complexion and brightness to the skin.

III. IYYAM (KABAM) :

a) THE NATURE OF IYYAM :

Greasy, cool, dull, viscous, soft and compact are the nature of Iyyam.

b) THE SITES OF IYYAM :

“கூறினோஞ் சிலேத்மமது சமான வாய்வைக்

கொழுதியே சுழிமுனையைப் பற்றி விந்தில்

கீறியே சிரசிலாக் கிணையைச் சேர்ந்து

சிங்குவையிண் ணாக்குநிண மச்சை ரத்தம்

மீறியே நிறங்கோண நரம் பெலும்பில்

மேவியதோர் மூலைபெருங் குடலிற் கண்ணில்

தேறியதோர் பொருத்திடங்க ளெல்லாஞ் சேர்ந்து

சிலேத்மமது வீற்றிருக்குந் திடங் கண்டாமே”

- வைத்திய சதகம்

Head, tongue, eyes, nose, throat, thorax, bone, bone marrow, joints, blood, fat, sperm and colon are the seats of Iyyam. It also lies in the stomach, spleen, the pancreas, chyle and lymph.

c) THE PROPERTIES OF IYYAM :

Stability, greasiness, formation of joints, the ability to withstand hunger, thirst, sorrow and distress are the qualities. It also helps to withstand sufferings.

d) THE FUNCTIONS OF IYYAM :

Greasiness, strength, roughness, knowledge, cool, growth, heaviness of bone, restriction of joint movements, pallor, indigestion, deep sleep and to have a sweet taste in

tongue are the functions of Iyyam. The skin, eyes, faces and urine are white in colour due to the influence of Iyyam.

e) THE TYPES OF IYYAM :

1. Ali iyyam – Avalambagam:

Heart is the seat of Avalambagam. It controls all other types of Iyyam.

2. Neerpi iyyam – Kilethagam :

Its location is stomach. It adds moisture & gives softness to the ingested food.

3. Suvai kaan iyyam – Pothagam :

Its location is tongue. It is responsible for the sense of taste.

4. Niraivaiyyam – Tharpagam :

It gives coolness to the vision.

5. Ondri iyyam – Santhigam :

It gives lubrication to the bones particularly in the joints.

THE UDAL THATHUKKAL (PHYSICAL CONSTITUENTS) :

Udal Thathukkal is the basic physical constituents of the body. They are also constituted by the Five Elements.

1. Saaram : This gives mental and physical perseverance.

2. Senneer : Imparts colour to the body and nourishes the body.

3. Oon : It gives shape to the body according to the physical activity and cover the bone.

4. Kozhuppu : It lubricates the joints and other parts of the body to function smoothly.

5. Enbu : Supports the frame and responsible for the postures and movements of the body.

6. Moolai : It occupies the medulla of the bones and gives strength and softness to them.

7. Sukkilam/ Suronitham : It is responsible for reproduction.

These are the seven basic constituents that form the Physical Body. The Bones are predominantly formed by the Earth component, but other elements are also present in it. All the three humours Vali, Azhal and Iyyam present in this 7 constituents.

The intake food converted to udal thaadhu in which the intake food is converted to saaram in the first day, and then it converted to chenneer in the second day, oon, kozhuppu, enbu, moolai and sukkilam/ Suronitham respectively in the following days. So in the seventh day only the intake food goes to the sukkilam / suronitham.

UDAL THEE (FOUR KINDS OF BODY FIRE) :

There are four kinds of body fire. They are Samaakkini, Vishamaakkini, Deekshaakkini and Manthaakkini.

1. SAMAAKKINI (BALANCED DIGESTIVE FIRE) :

The digestive fire is called as Samaakkini. This is constituted by Samana Vayu, Anala Pitham and Kilethaga Kabam. If they are in normal proportion then it is called as Samakkini. It is responsible for the normal digestion of the food.

2. VISHAMAAKKINI (TOXIC DIGESTION) :

Due to deranged and displaced Samana Vayu, it takes a longer time for digestion of normal food. It is responsible for the indigestion due to slow digestion.

3. DEESHAKKINI (ACCENTUATED DIGESTION) :

The samana vayu rounds up the Azhal, which leads to increased Anala Pitham, so food is digested faster.

4. MANTHAAKKINI (SLUGGISH DIGESTION) :

The samana vayu rounds up the Iyyam, which leads to increased Kilethaga Kabam. Therefore food is poorly digested for a very longer period and leads to abdominal pain, distension, heaviness of the body etc.

THINAI :

There are five thinai (The Land)

- 1. Kurinchi** - Mountain and its surrounding areas (Hilly terrain)
- 2. Mullai** - Forest and its surrounding areas (Forest ranges)
- 3. Marudham** - Agricultural land and its surrounding areas (Cultivable lands)
- 4. Neidhal** - The coastal area and its surrounding areas (Costal belts)
- 5. Paalai** - Desert and its surrounding areas (Arid zone)

FEATURES OF THE FIVE REGIONS :

1. KURINCHI :

"குறிஞ்சி வருநிலத்திற்கு கொற்றமுண்டி ரத்தம்
உறிஞ்சி வருசுரமு முண்டாம் - அறிஞருரைக்கஅனை
கையமே தங்குதரா தாமைவல்லை யுங்கதிக்கும்
ஐயமே தங்கும் அறி"

- பதார்த்த குண சிந்தாமணி

Fever causing anemia, any abnormal enlargement in the abdominal organ (vaitrulaamai katti) also leads to Iyya disease.

2. MULLAI :

"முல்லை நிலத்தயமே மூரிநிரை மேவினுமவ்
வெல்லை நிலைத்தபித்த மெங்குறுங்காண் - வல்லை யெனின்
வாதமொழி யாததனுள் மன்னு மவைவழிநோய்ப்
பேதமொழி யாதறையப் பின்பு"

- பதார்த்த குண சிந்தாமணி

This mullai land leads to Azhal, Vallai & Vali diseases.

3. MARUDHAM :

"மருதநிலம் நன்னீர் வளமொன்றைக் கொண்டே
பொருதனில மாதியநோய் போக்கும் - கருதநிலத்
தாறிரதஞ் சூழ அருந்துவரென் றாற்பிணியெல்
லேறிரதஞ் சூழ்புவிக்கு மில்"

- பதார்த்த குண சிந்தாமணி

All the Vali, Azhal and Iyyam disease will be cured in this land.

4. NEIDHAL :

"நெய்தனில மேலுப்பை நீங்கா துறினுமது
வெய்தனில மேதங்கு வீடாகும் - நெய்தல்
மருங்குடலை மிக்காக்கும் வல்லுறுப்பைவீக்கும்
கருங்குடலைக் கீழிறக்குங் காண்"

- பதார்த்த குண சிந்தாமணி

This place induces Vali diseases and affects liver and intestines.

5. PAALAI :

"பாலை நிலம்போற் படரைப் பிறப்பிக்க
மேலநில மியாது விரித்தற்கு - வேலைநில
முப்பிணிக்கும் இல்லம் முறையே யவற்றகலாம்
எப்பிணிக்கு மில்லமஃ தெண்"

- பதார்த்த குண சிந்தாமணி

This land produces all the three Vali, Azhal and Iyyam disease.

KAALAM :

Ancient Tamilians had divisions over the year into different seasons know as Perumpozhudhu and likewise in the day, it is known as Sirupozhudhu.

a. PERUMPOZHUDHU :

The year is divided into six seasons. They are,

1. Kaarkalam - Monsoon season (August 16-October 15)
2. Koothir - Post monsoon season (October 16-December 15)
3. Munpani - Early winter season (December 16-February 15)
4. Pin pani - Late winter season (February 16-April 15)
5. Ilavenil - Early summer season (April 16-June 15)
6. Mudhuvenil - Late summer season (June 16 – August 15)

b. SIRUPOZHUDHU :

The day has been divided into six yamams of four hours each. They are maalai (evening), Idaiyammam (Midnight), Vaikarai (Dawn), Kaalai (Morning), Nannpakal (Noon), Erpaddu (Afternoon). The each perumpozhuthu and sirupozhuthu is associated with the three humours naturally.

NILAM	POZHUTHU	
	PERUMPOZHUTHU	SIRUPOZHUTHU
Kurinchi	Koothir kaalam, Munpani	Naduiravu
Mullai	Kaarkaalam	Maalai
Marutham	Ilavenil, Venil, kaarkaalam, koothirkaalam, Munpani, Pinpani	Vaigarai, kaalai
Neithal	Ilavenil, Venil, kaarkaalam, koothirkaalam, Munpani, Pinpani	Pirpagal
Paalai	Venil, Pinpani	Nadupagal

Table 1 - Pozhuthu

FOURTEEN NATURAL REFLEXES / URGES:

The natural reflexes excretory, protective and preventive mechanisms are responsible for the reflexes, urges and instincts. They are 14 in number

1. Vatham (Flatus)
2. Thummal (Sneezing)
3. Siruneer (Micturition)
4. Malam (Defecation)
5. Kottavi (Act of yawning)
6. Pasi (Sensation of hunger)
7. Neer vetkai (Sensation of thirst)
8. Erumal (Coughing)
9. Elaipu (Fatigue)
10. Thookam (Sleep)
11. Vaanthi (Vomiting)
12. Kanneer (Tears)
13. Sukkilam (Semen)
14. Suvasam (Breathing)

These natural reflexes are said to be an indication of normal functioning of our body. A proper maintenance should be carried out and they should not be restrained with force.

3. B. SIDDHA PATHOLOGY

KUGARANA NILAI IN SIDDHA MEDICINE

This is the first medical system to emphasis health as the perfect state of physical, psychological, social and spiritual components of human being. The condition of the human body in which the dietary habits, daily activities and the environmental factors influences to keep the three humors in equilibrium is considered as healthy living.

DISEASE

Disease is also known by other names viz sickness, distemper, suffering, ailment, distress of mind, chronic disease and dreadful illness.

1.THE CHARECTERISTIC FEATURE OF DISEASES

Diseases are of two kinds

- i. Pertaining to the body
- ii. Pertaining to the mind according to the variation of the three humors.

CAUSES OF DISEASE

Excepting the disease caused by our previous births, the disease is normally caused by our food habits and actions. This has been rightly quoted in the following verses by Sage Thiruvalluvar,

"மிகினும் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா எண்ணிய முன்று"

-திருவள்ளுவர்

The food and actions of a person should be in harmony with the nature of his body. Any increase or decrease in a humor viz. Vatham, Pitham, Kabam leads to the derangement of the three humors. The acceptance of food means the taste and quality of the food eaten and a person's ability to digest. 'Actions' mean his good words, deeds or bad actions. According to Sage Thiruvalluvar, the disease is caused due to the increase or decrease of three humors causing the upset of equilibrium. So disease is a condition in which there is derangement in the five elements, which alters the three humors, reflected in turn in the seven physical constituents. The change could be an increase or decrease in the humors. This shows the following signs as per vitiation of the individual humor.

2. QUANTITATIVE CHANGES OF UYIR THATHUKKAL

HUMOUR	INCREASED	DECREASED
VALI (Vatham)	Wasting, blackish discoloration, affinity to hot foods, tremors, distended abdomen, onstipation, weakness, insomnia, weakness in sense organs, giddiness and laziness.	Body pain, feeble voice, and diminished capability of the brain, decreased intellectual quotient, syncope and increased kaba condition.
AZHAL (Pitham)	Yellowish discoloration of conjunctiva, skin, urine and feces, polyphagia, polydypsia, dyspepsia, burning sensation all over the body and decreased sleep.	Loss of appetite, cold, pallor and features of increased kabam.
IYYAM (Kabam)	Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnea, flatulence, cough and excessive sleep.	Giddiness, dryness of the joints and prominence of bones. Profuse sweating in the hair follicles and palpitation

Table-2 Changes of Uyir Thathukkal

3. UDAL THATHUKKAL

UDAL THATHUKKAL	INCREASED FEATURES	DECREASED FEATURES
SAARAM	Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnoea, flatulence, cough and excessive Sleep	Dryness of skin, tiredness, loss of weight, lassitude and Irritability while hearing louder sounds.
SENNEER	Boils in different parts of the body, splenomegaly, tumours, pricking pain, loss of appetite, haematuria, hypertension, reddish eye and skin, leprosy and jaundice.	Affinity to sour and cold food, nervous debility, dryness and Pallor.
OON	Tubercular adenitis, venereal diseases, extra growth around neck, cheeks, abdomen, thigh and genitalia.	Lethargic sensation, pain in joints, muscle wasting in mandibular region, gluteal region, penis and thighs.
KOZHUPPU	Features of increased musculature, tiredness, dyspnoea on exertion, extra musculature in gluteal region, external genitalia, chest, abdomen and thighs.	Loins pain, splenomegaly and emaciation.
ENBU	Excessive ossification and redundant dentition	Joint pain, falling of teeth, falling and splitting of hairs and nails.
MOOLAI	Heaviness of the body and eyes, Swollen Inter phalangeal joints, oliguria and non-healing ulcers	Osteoporosis and Blurred vision.
SUKKILAM (OR) SURONITHAM	Increased sexual activity, urinary calculi	Dribbling of sukkilam / suronitham or senneer during coitus, pricking pain in the testis and inflamed& contused external genitalia.

Table-3 Changes of Udal Thathukkal

4. SUVAIKAL

TASTES	DISEASES DUE TO HIGH INTAKE
Inippu	Develops obesity, excessive fat, increased mucous secretion, indigestion, diabetes, cervical adenitis, increased kabam and its diseases
Pulippu	Develops nervous weakness, dull vision, giddiness, aneamia, dropsy, dryness of tongue, acne, blisters etc.
Uppu	Ageing, hair loss, leprosy, dryness of tongue, debility
Kaippu	Increased dryness of tongue, defective Spermatogenesis, body weakness, dyspnoea lassitude, tremor, back and hip pain
Kaarppu	Dryness of tongue, generalized malaise, tremor, back pain, lassitude etc.
Thuvarppu	Abdominal discomfort, chest pain, tiredness, impotency, vascular constriction, constipation, dryness of tongue etc.

Table-4 Suvaikal

5. KAALAM

KAALAM (Season)	KUTTRAM	STATE OF KUTTRAM
1. Kaarkaalam (Rainy)Aavani -Puratasi(Aug 16 – Oct 15)	Vatham ↑↑ Pitham ↑ Kabam (--)	Ectopic escalation In situ escalation Restitution
2. KoothirKaalam (Post rainy)Iypasi –Karthigai (Oct 16 – Dec 15)	Vatham (--) Pitham ↑ ↑ Kabam (--)	Restitution Ectopic escalation Restitution
3. MunpaniKaalam (Winter) Markazhi – Thai (Dec 16 – Feb 15)	Vatham (--) Pitham (--) Kabam (--)	Restitution Restitution Restitution
4. PinpaniKaalam (Post winter)	Vatham (--) Pitham (--)	Restitution Restitution

Masi – Panguni (Feb 16 –Apr 15)	Kabam ↑ ↑	In situ escalation
5. ElavenirKaalam (Summer) Chithirai – Vaikasi(Apr 16 – Jun 15)	Vatham (--) Pitham (--) Kabam ↑ ↑	Restitution Restitution Ectopic escalation
6. MudhuvenirKaalam (Post summer) Aani – Aadi (Jun 16 – Aug 15)	Vatham ↑ Kabam (--)	In situ escalation Restitution

Table 5.changes in climatory condition of the external world has its corresponding effects on the human organ

6.THINAI

THINAI	LAND	HUMOURS
1. Kurinchi	Mountain and its surroundings - Hilly terrain	Kabam
2. Mullai	Forest and its surroundings - Forest ranges	Pitham
3. Marutham	Farm land and its surroundings - Cultivable lands	All three humors are in Equilibrium
4. Neithal	Sea shore and its adjoining Areas - Coastal belt	Vadham
5. Paalai	Desert and its surroundings - Arid zone	All three humors are affected

Table 6 – Thinai

ALTERATION IN REFLEXES (14Vegangal)

There are 14 natural reflexes involved in the physiology of normal human being. If wilfully restrained or suppressed, the following are resulted.

1. Vatham (Flatus)

This urge should not be suppressed. If it is suppressed it leads to chest pain, epigastric pain, abdominal pain, aches, constipation, dysuria and indigestion predominate.

2. Thummal (Sneezing)

If restrained, it leads to headache, facial pain, low back pain and neurotic pain in the sense organs.

3. Siruneer (Urine)

If restrained, it leads to urinary retention, urethral ulcer, joint pain, pain in the penis, gas formation in abdomen.

4. Malam (Feces)

If restrained, it leads to pain in the knee joints, headache, general weakness, flatulence and other diseases may also originate.

5. Kottavi (Yawning)

If restrained, it leads to indigestion, leucorrhoea, and abdominal disorders.

6. Pasi (Hunger)

If restrained, it leads to the tiredness of all organs, emaciation, syncope, apathetic face and joint pain.

7. Neervetkai (Thirst)

If restrained, it leads to the affection of all organs and pain may supervene.

8. Kaasam (Cough)

If it is restrained, severe cough, bad breath and heart diseases will be resulted.

9. Ilaippu (Exhaustiveness)

If restrained, it will lead to fainting, urinary disorders and rigor.

10. Nithirai (Sleep)

All organs will get rest only during sleep. So it should not be avoided. Disturbance will lead to headache, pain in the eyes, deafness and slurred speech.

11. Vaanthi (Vomiting)

If restrained, it leads to itching and symptoms of increased Pitham.

12. Kanneer (Tears)

If it is restrained, it will lead to Sinusitis, headache, eye diseases and Chest pain.

13. Sukkilam (Semen)

If it is restrained, there will be joint pain, difficulty in urination, fever and chest pain.

14. Suvasam (Breathing)

If it is restrained, there will be cough, abdominal discomfort and Anorexia.

3. C. DIAGNOSTIC METHODOLOGY

The methodology of diagnosing disease in Siddha system shows uniqueness in its principle. The principle comprises of examination of Tongue, Complexion, Modulation in speech, inspection of eyes and findings by palpation. It also includes examination of Urine and Stool. The reinforcement of Diagnosis is based on Naadi (Pulse) examination. All these together constitute 'Envagai thervugal' which forms the basis of diagnostic methodology in Siddha system of Medicine.

These tools not only help in diagnosis but also to observe the prognosis of the disease and for reassuring the patient and to be informed about the nature of diseases. Besides these Envagaithervugal there are some other parameters in Siddha system which are greatly helpful in diagnosing various disease, they are Madikadainool (Wrist circummetric sign) and Soditham (Astrology).

PORI ARITHAL, PULAN ARITHAL:

ENVAGAI THERVUGAL (Eight fold examination)

The eight such diagnostic methods, collectively referred to as "Envagai thervu (Eight type) Thervugal (Examination)" in Siddha system.

“அகத்துறு நோயை கரத்தாம லகம்போல்
பகுத்தறிவீர் நாடிப் பரிசம் - தொகுத்த நிறம்
கட்டுவகைச் சொல்மொழிக் கண்ட மல மூத்திரம் நா
எட்டுவகை யாலு மறிவீர்”

- அகத்தியர் வைத்திய சிந்தாமணி வெண்பா-4000

Various aspects of Siddha regarding 'Envagai Thervu'

"நாடி பரிசம் நாநிறம் மொழிவிழி
மலம் மூத்திரமிவை மருத்துவராயுதம்"

- தேரையர்.

"மெய்குறி நிறந்தொனி விழிநாவிருமலம் கைக்குறி"

- தேரையர்

The eight methods of diagnosis are Naadi (Pulse), Sparisam (Palpation), Naa (Tongue), Niram (Color), Mozhi (Voice), Vizhi (Eyes), Malam (Feces) and Neer (Urine).

1. NAADI (Examination of pulse)

The pulse Diagnosis is a unique method in Siddha Medicine. The pulse should be examined in the right hand for male and the left hand for female. The pulse can be recorded at the radial artery. By keenly observing the pulsation, the diagnosis of disease as well as its prognosis can be assessed clearly.

Naadi is nothing but the manifestation of the vital energy that sustains the life with in our body. Naadi plays an most important role in Envagaithervu and it has be considered as foremost thing in assessing the prognosis and diagnosis of various diseases. Any variation that occurs in the three humors is reflected in the Naadi. These three humors organize, regularize and integrate basic functions of the human body. So, Naadi serves as good indicator of all ailments.

நாடிபார்க்கும்வகை

"இடுமென்ற நாடிகள் பார்க்கும் வகையைக்கேளு
என்னவென்றால் நடுவிரல் நீவிப்பின்னே
அடுமென்ற அடுத்தவிரல் மோதிரமாம் விரலை
அப்பனே இறுத்தபின்பு சுண்டுவிரலினுத்து
உடுமென்ற தூண்டுவிரலி னுத்து அப்பால்
உத்ததொரு அங்குட்ட விரலைநீ விக்கரத்தில்
படுமென்ற சீயோதி அங்குல மோதள்ளி
பார்தவிட மூன்றுதரம் சுரம்பார்க்கும் வகையே
வகைஎன்ன வாதமதுஒண்ணரையாம் பித்தம்
வளமையொன்று அய்யங்கால் வளமாய்நிற்கில்
பகையில்லை நாடிகளுந் தொந்த மில்லை
பண்பான் சுகரொசுருபக் கூறுசொன்னேன்"

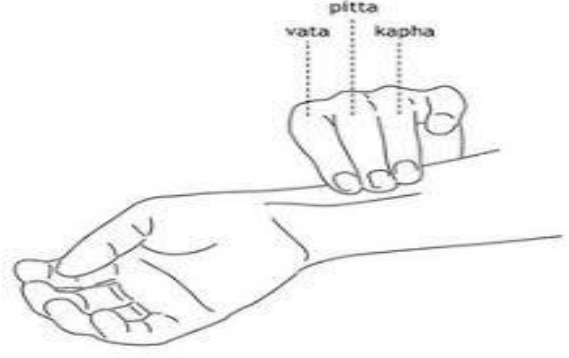
- அகத்தியர் கனகமணி 100

Naadi is felt by

Vali - Tip of index finger

Azhal - Tip of middle finger

Iyyam - Tip of ring finger



மூவகையும் மாத்திரை அளவும்:

"வழங்கிய வாதம்மாத்திரை ஒன்றாகில்
வழங்கிய பித்தம் தன்னில் அரைவாசி
அழங்கும் கபந்தான்அடங் யேகாலோடில்
பிழங்கிய சீவர்க்குப் பிசுகொன்று மில்லையே"

- குணவாகட நாடி

The pulse is measured in wheat/grain expansile heights. The normal unit of pulse diagnosis is 1 for Vali (Vaadham), ½ for Azhal (Pitham) and ¼ for Iyyam (Kabam).

நாடி நடை

"வாகிலன்னங் கோழி மயிலென நடக்கும் வாதம்
ஏகிய வாமையட்டை யிவையென நடக்கும் பித்தம்
போகிய தவளை பாம்பு போலவாம் சேத்துமந்தான்"

- குருநாடி

Compared to the gait of various animals, reptiles and birds.

Vali - Gait of Swan and peacock

Azhal - Movement of Tortoise and Leech

Iyyam - Leaping of Frog and Crawling of a Serpent

2.SPARIAM (Examination by touch)

"வெம்மை குறைந்தாலு மிகுந்தாலும் வாதபித்தம்
தம்மை நிரைநிரையாய்ச் சாற்றுவார்-வெம்மையன்றி
சீதமுஅவ் வாறாகில் சிலேட்டும் மொன்றுதொந்த
மீதமும்அவ் வாறாகு மேல்"

- அகத்தியர் வைத்திய சிந்தாமணி வெண்பா-4000

"நேயமுடனே வாதத்தின் தேசந்தாணும்

நேர்மையாய் குளிர்ந்து சில விடத்திலே தான்

மாயமுட னுட்டணமுந் துடிதுடிப்பு

மருவுதலாம் பித்தத்தின் தெகந் தானும்

தோயவே வுட்ணமதா யிருக்குந் தெளிவாய்

சேத்துமத்தின் தேகமது குளிர்ந்திருக்கும்

பாய தொந்த தேகமது பலவாறாகும்

பரிந்து தொட்டுத் தேகத்தைப் பார்த்துப் பேசே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

In Vali disease, some regions of the body felt chill and in some areas they are hot.

In Azhal disease, we can feel heat.

In Iyya disease, chillness can be felt.

In Thontham diseases, we can feel altered sensations.

3.NAA (Examination of tongue)



"பலமான ருசியறியும் நாவின் கூற்றை

பகர்கின்றேன் வாதரோகி யின்றன் நாவு

கலமாக வெடித்து கறுத்திருக்கு முட்போல்

கண்டு கொள்வாய் பித்தரோகியின்றன் நாவு

நலமுற சிவந்து பச்சென்றிருக்கும் நட்பிலா

சிலேத்துமரோகி யின்றன் நாவு

தலமதனிலுற்றமுதி யோர்கள் சொன்ன

தன்மையடி தடித்து வெளுத்திருக்கும் பாரே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

In Vali derangement, tongue will be cold, rough, furrowed and tastes pungent.

In Azhal, it will be red or yellow and bitter taste will be sensed.

In Iyyam, it is pale, sticky and with lingering of sweet taste.

In Thontham, tongue will be dark with raised papillae and dryness.



VATHAM

PITHAM

KABAM

4.NIRAM (Examination of complexion)

"தேகத்தி னிறந்தானுஞ் செப்பக் கேளீர்

சிறுமையாய் வாதந்தான் கறுத்தி ருக்கும்

போகத்தின் பித்தநிற மஞ்ச ளாகும்

பெருஞ்சேதம் ரோகிக்கு வெளுப்ப தாகும்

பாகத்தின் தொந்தரோ கிக்குத் தானும்

பலபலவன் ணமுமாகிப் பரந்து நிற்கும்"

- சித்த மருத்துவாங்கச் சுருக்கம்

In Vali, Azhal and Iyyam variations, the colour of the body will be dark, yellow or red and fair respectively.

"உரைத்தகற் பான்வாத ரோகிபித்த ரோகி

அரைத்தமஞ்ச ளைக்குளித்தோன் ஆவான் - இரத்தம்

குளித்தவனு மாவான் கொடும்சிலேத்தும ரோகி

வெளுத்திடுவான் தொந்த ரோகியே"

- அகத்தியர் வைத்திய சிந்தாமணி - 4000

According to Agathiyar Vaithiya Chinthamani - 4000, In Vatha, Pitha and Kapha vitiations the colors of body like as yellow, red and pale.

"மூன்றாகும் வாதபித்த சிலேத்து மத்தால்

மிகுந்தமுறத் தொந்தித்த ரோகி தேகம்

தோன்றாத சீதய வுஷ்ணங் காலமுன்றுந்

தொகுத்தேன்யான் திரேகத்தி நிறத்தைக் கேளு

ஊன்றாத வாதவுடல் கறுத்துக் காணும்

ஊறியபித்த முடல் சிவப்புப் பசுமைகாணும்
போன்றாத வையவுடல் வெண்மை தோன்றும்
பொருந்துந்தொந்த ரோகவுடற் கிவற்றை யொக்கும்"
- கண்ணுசாமி பரம்பரை வைத்தியம்

According to Kannusamy Paramparai Vaithiyam, In Vatha, Pitha and kapha vitiations, the colors of the body like as black, reddish green and white. In Thontha constitution, the color of the body will be associated with combination of two humours.

"பனைவாத தேகநிறங் கறுத்து நிற்கும்
பைத்தியதேக நிறமஞ்சள் சிவப்பதாமே
தாமே சிலேட்டு மதேகநிறம் வெளுப்பு தான்
தொந்தேகம் இந்நால் விதமாய் நிற்கும்"
- தன்வந்திரி (பதினெண் சித்தர் நாடி சாத்திரம்)

According to Pathinen Siddhar Naadi Nool, In Vatha, Pitha and Kapha vitiations, the colors of the body like as black, yellowish red and white. In Thontha constitution, the color of the body will be associated with combination of two humours.

5.VIZHI (Examination of Eyes)

"உண்மையாய் கண்கள்குறிப் பதைக்கேள் வாதம்
உற்றவிழி கறுத்துநொந்து நீருங் காணும்
தண்மையிலாப் பித்தரோகி யின்றன் கண்கள்
சார்பாகப் பசுமைசிவப் பேறுங் காணும்
வண்மையிலா வையரோகி விழிகள் தானும்
வளமான வெண்மைநிற மேதா நாதம்
திண்மையிலாத் தொந்தரோகி யின்றன் கண்கள்
தீட்டுவாய் பலநிறமென் றறைய லாமே"
- கண்ணுசாமி பரம்பரை வைத்தியம்

"காணுகின்ற வாத ரோகிக்கு கண்கள்
கருநிறமாய் நொந்துமிகத் தண்ணீர்பாயும்
பூணுகின்ற பித்தரோகிகடி மஞ்சள் போலிருக்கம்
சிவப்பு நிறப்பொலிவு தோன்றும்"

- பதினெண் சித்தர் நாடி சாத்திரம்

In Vali disease the tears are darkened.

In Azhal disease tears are yellow.

In Iyya disease tears are whitish in colour

In Thontha disease the tears are multi tinged.

In Vali disease there will be excessive tears (epiphora).

In disturbance of all three humors, eyes will be inflamed and reddish.

6. MOZHI (Examination of voice)

"பார்பதான் வாதரோகி யின்றன் வார்த்தை
பக்குவமாய்ச் சமசத்த மாயிருக்கும்
சேர்ப்பதுதான் பித்தரோகியின்றன் வார்த்தை
செப்பக்கோள பெலத்துமே யுறத்திருக்கும்
ஏற்பதுதான் ஐயரோகி யின்றன் வார்த்தை
யெளிதாகச் சிறுத்திருக்குமியல்பி தாகும்
கேசற்கவே யிம்மூன்றுந் தொந்தமாகில்
கூசாமற் பலவிதமாய் பேசுவாரே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

In variation of Vali, Azhal and Iyyam the voice will be medium, high and shrill/low pitched respectively. By the voice, the strength of the body can be assessed.

7. MALAM (Examination of feces)

"ஒக்குமே வாத நோய் மலத்தைப் பார்க்கில்
உகந்தமலம் கறுகியெ கறுத்திருக்கும்
மிக்கபித்த நோய்மலத்தை யுற்றுப் பார்க்கில்
மிகுந்தசிவப்புடன் பசுமை தானுந் தோற்றும்
மைக்குவளை மனேகே ளைய ரோகம்
மலமதுதான் வெண்மைனிற மாயிருக்கும்
பக்குவமா யிம்மூன்றுந் தொந்திப் பாகில்
பகருமின் நிறங்கள்வகை பரிந்து காணும்"

- கண்ணுசாமி பரம்பரை வைத்தியம்

In exacerbated Vali, faeces is hard, dry and darker in colour.

In Azhal vitiation, it is yellow.

In Iyyam disturbances, it is pale

In Thondham, it is a mixture of all colours.

8. MOOTHIRAM (Examination of urine)

“ஓங்கிய வாதத்தோர்க்கு நீர்விழுங் குணந்தா நுரைக்கின்ற
பூங்கொடி கறுத்து நொந்து சிறுத்துடன் பொருமி விழும்
பாங்குடன் பித்ததோர்க்கும் பசிய நீர் சிவந்து காட்டி
ஏங்கவே கறுக்கதாக எரித்துடன் கடுத்து வீழும்
வீழுமே சிலேற்பனத்தோர் நீர்க்குணம் விளம்பக் கேளாய்
நாளுமே வெளுத்துறைந்து நலம்பெறவீழுங் கண்டாய்
வாள்விழி மானேதொந்த ரோகமானிடர்க்குந் தானே
தாளுநீர் பலநிறந்தா னெனவேசாற்றி னோமே”

- கண்ணுசாமி பரம்பரை வைத்தியம்

For patients suffering from vatha diseases, the urine will be scanty and dysuria.
For patients suffering from pitham the urine will be greenish red in colour and there will be burning micturition

தேரர்நீர்குறி நெய்க்குறி

"அருந்துமாறிரதமும் அவிரோதமதாய்
அஃகல் அலர்தல் அகாலவூன் தவிர்ந்தழற்
குற்றளவருந்தி உறங்கி வைகறை
ஆடிக்கலசத் தாவியே காது பெய்
தொருமுகூர்த்தக் கலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிறுமித்தல் கடனே"

- தேரையர் நீர்க்குறி நெய்க்குறி

Theraiyar, one of the renowned authors of Siddha medicine described urine examination and stages of health. He had explained about the colour and consistency of the urine in vitiated humor and disease (Neerkuri). He also emphasized about the spreading nature of a single drop of oil on the surface of the urine indicating the imbalance of specific dosha and prognosis of disease (Neikkuri).

Neerkuri

“வந்த நீர்க்கரி எடை மணம் நுரை எஞ்சலென்
றைந்தியலுளவவை யறைகுது முறையே”

- தேரன் நீர்க்குறி நெய்க்குறி

Five characters of urine have to be examined. They are colour, consistency, odour, froth and deposits.

Colour of the urine

Normal urine is straw yellow colored and mildly aromatic. The time of the day and food taken will have an impact on the colour of the urine.

Colour of the urine in diseased condition

Yellow colour (Similar to straw soaked water) - Indigestion

Lemon colour - Good digestion

Reddish yellow - Heat in body

Colour similar to flame of forest red or flame coloured - Excessive heat

Colour of saffron - Extreme heat

Neikkuri

"அரவென நீண்டினஃதே வாதம்

ஆழிபோல் பரவின் அஃதே பித்தம்

முத்தொத்து நிற்கின் மொழிவதன் கபமே"

- தேரன்நீர்க்குறி நெய்க்குறி

The spreading pattern of oil drop is the indicative of Vali, Azhal and Iyyam diseases.

Aravu (Snake Pattern of spread) indicates Vali disease,

Aazhi (Ring Pattern of spread) indicates Azhal disease.

Muthu (Pearl Pattern of spread) indicates Iyya disease.

In Neikkuri, the rapid spread of oil drop; Pearl beaded and Sieve type of spreading pattern indicates incurable state of the disease. From this, we can assess the prognosis by the Neikkuri.

Indications of spreading pattern of oil

Lengthening - Vali

Splits - Azhal

Sieve - Iyyam

Stands as a drop - Poor prognosis

Slowly spreads - Good prognosis

Drop immerses into Urine - Incurable disease

MANIKKADAI NOOL (Wrist circumetric sign)

Ref:Agathiyarsoodamanikayarusoothiram

"கமலக்கை மணிக்கையில் கயறு சூத்திரம்
விமலனே நோக்கியே வேடமாமுனி
திமிலாம் பிணியது சேரச் செப்பியே
அமலனாமுனிக்கு முன்னருளிச் செய்ததே"

- பதினெண் சித்தர் நாடிநூல்

According to the Pathinen Siddhar Naadinool, Manikadainool is also helpful in diagnosis. This manikkadainool is a parameter to diagnose the disease by measuring the circumference of the wrist by means of a thread and then expressing it in terms of patient's finger breadths. By this measurement the disease can be diagnosed.



METHOD OF MEASURING MANIKADAI NOOL

Manikadai nool inference

(Ref: Agathiyarsoodamanikayarusoothiram)

When the Manikkadainool is 11 fbs, the person will be stout and he will live a healthy life for many years. When the Manikkadainool measures between 4 & 6, it indicates poor prognosis of disease and the severity of the illness will be high and it leads to death.

Measurement Possible conditions

- 10 fbs Pricking pain in chest and limbs, gastritis and ulcer result.
- 9 $\frac{3}{4}$ fbs Fissure, dryness and cough will be resulted.
- 9 $\frac{1}{2}$ fbs Odema, increased body heat, burning sensation of eye, fever, Meganoi & Anorexia.
- 9 $\frac{1}{4}$ fbs Dysuria, Insomnia, Sinusitis and burning sensation of Eye.
- 9 fbs Impaired hearing, pain around waist, thigh pain, unable to walk.
- 8 $\frac{3}{4}$ fbs Increased body heat, skin disease due to toxins, abdominal discomfort Cataract, sinusitis.
- 8 $\frac{1}{2}$ fbs Leucorrhoea, venereal disorder and Infertility will occur.
- 8 $\frac{1}{4}$ fbs Stout and painful body. Headache, Sinusitis and toxins induced Cough.
- 8 fbs Abdominal discomfort, gastritis, anorexia & venereal diseases.
- 7 $\frac{3}{4}$ fbs Piles, burning sensation of limbs, headache, numbness occur. Within 2 years cervical adenitis and epistaxis results.
- 7 $\frac{1}{2}$ fbs Osteoporosis, abdominal discomfort, burning sensation of eyes, increased body temperature. Within 6 days all the joints of the limbs presents a swelling.
- 7 $\frac{1}{4}$ fbs Lumbar pain, increased pitha in head, anemia, eye pain, odema and somnolence
- 7 fbs Pitham ascends to head, haemetemesis, phlegm, burning sensation of limbs and constipation.
- 6 $\frac{3}{4}$ fbs Eye ache, dizziness, testis disorder. Within 3 years it causes anuria, pain and burning sensation over limbs, facial sweating results.
- 6 $\frac{1}{2}$ fbs Thirst, anorexia, increased body heat and vatham results.
- 6 $\frac{1}{4}$ fbs Diarrhea, belching, vomiting and mucous dysentery
- 6 fbs Reduced weight, phlegm in chest. It results in death within 20days.
- 5 $\frac{3}{4}$ fbs Delirium, dizziness, loss of consciousness. It results in death even if the patient takes gruel diet
- 5 $\frac{1}{2}$ fbs Severity of illness is increased. Toxins spread to the head. Tooth darkens. Patient will die in 10 days.

- 5 ¼ fbs Patient seems to be sleepy and death results on the next day.
- 5 fbs Pallor and dryness of the body. Kabam engorges the throat and the person will die.
- 4 ¾ fbs Dryness of tongue and tremor present. Patient will die in 7days.
- 4 ½ fbs Shrunken eyes, odema will present and death results in 9 days.
- 4 ¼ fbs Tremor, weakness of limbs and darkening of face occurs.

4. READING BETWEEN THE LINES OF NETRISOOLAI VATHAM

4.1 ACCORDING TO YUGI VAITHIYA CHINTHAMANI

The song for Netrisoolai vatham is as follows,

நெற்றிகுலை வாதம்

“வாறான நயனந்தான் புருவ மற்றை
மத்தியத்திற் குடைந்துமே மூக்குத் தண்டு
கூறான குரலினைத்தான் பற்றி நொந்து
குடைந்துமே கையோடு கால்கள் ரண்டும்
ஆறான அங்கமெல்லாங் கடுப்புண்டாகு
மமுகுரலாய் நித்திரையு மயக்கமாகுந்
தேறான சிரசினிற் குத்தலுண்டாம்
சிறுநெற்றி குலையின்றன் செய்கைதானே”

- யுகி வைத்திய சிந்தாமணி - 800, பக்க எண் - 84

According to the text Yugivaithya chinthamani, *Netrisoolai vaatham* is a type of vatha disease characterized by throbbing pain in between eyebrows and bridge of nose, pain in head, Body pain, weariness of limbs, throat pain, sleepiness and fatigue.

BREAKUP SYMPTOMATOLOGY

S.NO	LINES FROM POEM	BREAKUP SYMPTOMATOLOGY
1	“வாறான நயனந்தான் புருவ மற்றை மத்தியத்திற் குடைந்துமே மூக்குத் தண்டு	Pain in between the eyebrows , head ache and pain in bridge of the nose
2	கூறான குரலினைத்தான் பற்றி நொந்து	Throat pain
3	குடைந்துமே கையோடு கால்கள் ரண்டும் ஆறான அங்கமெல்லாங் கடுப்புண்டாகு	Weariness of the body / Body pain
4	அமுகுரலாய்	Inflammation of larynx / throat / tonsilitis
5	நித்திரையும் மயக்கமாகும்	Sleepiness , Giddiness / drowsiness / fatigue
6	தேறான சிரசினில் குத்தலுண்டாம்	Pain in the head

Table 7. Breakup symptomatology

LIGHT FROM LEXICONS

S.No	Words from poem - Yugi Text	T.V.Sambasivampillai Dictionary Meaning in Tamil	T.V.Sambasivam Pillai, Dictionary meaning in English	Lexicon T.V.Sambasivanpillai Reference
1	நயனம்	கண்	Eye in general	Pg no – 1523 Vol-IV(Part-II)
2	புருவம்	நெற்றி புருவம்	Eyebrow	Pg no - 503 Vol-V
3	மத்தியமம்	நடு	Middle	Pg no - 694 Vol-V
4	குடைதல்	குடைச்சலுண்டாதல்	Feeling continuous boring pain	Pg no - 1499 Vol-II
5	மூக்குத்தண்டு		Bridge of the nose	Pg no – 872 Vol-IV
6	கூறு	தன்மை	Nature of the body	Pg no – 1614 Vol-II
7	குரல்	தொண்டையின் பேச்சொலி/மிடறு	Voice / Throat ; Wind pipe	Pg no - 1540 Vol-II
8	கை	கரம்	Hand / Arm	Pg no - 1636 Vol-II
9	கால்		Leg-Lower limb of the body of human being	Pg no - 1409 Vol-II
10	ஆறு/ ஆறுதல்	குளிற்தல்	Cooling / Growing cold	Pg no - 680 Vol-I
11	அங்கம்		Part of the body / The portion of the main body without the limbs –Trunk , body	Pg no - 88 Vol-I
12	கடுப்பு	கடுநோய்/ எரிவு	Severe pain / Inflammation	Pg no - 985 Vol-II

13	அழு	அழுதல்	To cry / to weep / Inflammation	Pg no - 492 Vol-I
14	நித்திரை மயக்கம்		Sleepiness / drowsiness	Pg no - 1766 Vol- IV(Part-II)
15	தேறு	சுத்தம்	Cleanliness	Pg no - 1376 Vol- IV(Part-II)
16	சிரசு		Head	Pg no - 2170 Vol-3
17	குத்தல்	உடம்பினுள் ஏற்படும் குத்தல் வலி	Internal pain. Pricking / boring pain inside the body	Pg no - 1517 Vol-II
18	சூலை		Morbid fluid spreads all over the body through the nerves causing swelling of the body&ulcers all over through which pus and fluid ooze out. The joints of the limbs are specially swollen and attended with boils and itching , குத்தல் - Acute pain	Pg no-410,409 Vol- IV(Part-I)
19	செய்கை		Acts done	Pg no – 526 Vol- IV(Part-I)

Table 8 - Light from Lexicons

**ANALOGY BETWEEN THE LINES OF YUGI VAITHYA CINTHAMANI
AND MODERN TEXT**

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“..வாறான நயனந்தான் புருவ மற்றை மத்தியத்திற் குடைந்துமே மூக்குத் தண்டு..”

QUOTINGS FROM MODERN TEXT ABOUT NETRISOOLAI VATHAM

“.....*Frontal sinusitis* is characterised by *severe frontal pain* and perhaps *retro orbital pain*.....”

- Diseases of sinuses: diagnosis and management, Part 611

“.....In *Frontal sinusitis*, there will be *pain in forehead* or *above eyes*....”

- P.No.154, Essentials of otolaryngology - Frank E Lucente, Gady Har - EI

.....*facial pain/pressure/head ache* ranges from vague and purely localized to *sharp and focal*.....above or below the eyes,or *across the bridge of the nose*.....

- Daniel L. Hamilos,Fuad M. Baroody, editors. *Chronic Rhinosinusitis Pathogenesis and Medical Management.1st ed.Informa Heailhcare USA:New York;2007.P.No-6*

.....Sinus headaches cause a *dull, deep, throbbing pain in the front of head and face*. Worse pain in the morning (because mucus has been collecting and draining all night)

- “*The Diagnosis and Management of Acute and Chronic Sinusitis*”. *Primary Care: Clinics in Office Practices* 35 (1): 11-24. Doi: 10.1016/j.pop.2007.09.002. PMID 18206715

“.....Headache/facial pain or pressure of a dull, constant, or aching sort over the affected sinuses is common with both acute and chronic stages of sinusitis. This pain is typically *localised to the involved sinus* and may worsen when the affected person bends over or when lying down.....”

-abc university of Maryland - Sinusitus Complications

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“...குடைந்துமே கையோடு கால்கள் ரண்டும்...”

“....ஆறான அங்கமெல்லாங் கடுப்புண்டாகும்...”

QUOTINGS FROM MODERN TEXT ABOUT NETRISOOLAI VATHAM

.....Chronic rhinosinusitis is characterized by elevated levels of **bodily pain**.....

Alexander C. Chester, MD, Raj Sindwani, MD, FRCS, Timothy L. Smith, MD, MPH, and Neil Bhattacharyya, MD. Systematic review of change in bodily pain after sinus surgery

Otolaryngol Head Neck Surg. Author manuscript; available in PMC 2010 May 17.

Published in final edited form as: Otolaryngol Head Neck Surg. 2008 Dec; 139(6): 759–765doi: 10.1016/j.otohns.2008.09.020PMCID: PMC2871684IHMSID : NIHMS188644

“.....Chronic sinusitis appears to be commonly associated with fatigue and **bodilypain**....”

- P.No. 88, Chronic fatigue syndrome:advances in epidemiologic, clinical, and basic...- Roberto Patarca- Montero

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“....அழகுரலாய்...”

QUOTINGS FROM MODERN TEXT ABOUT NETRISOOLAI VATHAM

.....Conditions that cause **irritation and inflammation of the pharynx**,... such as chronic sinusitis with postnasal drip, can be the cause of **globus sensation** by producing **increased local sensitivity**[28,44].....

World J Gastroenterol. 2012 May 28; 18(20): 2462–2471.Published online 2012 May

28. doi: 10.3748/wjg.v18.i20.2462 PMCID: PMC3360444Globus pharyngeus: A review of its etiology, diagnosis and treatment Bong Eun Lee and Gwang Ha Kim

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“....கூறான குரலினைத்தான் பற்றி நொந்து....”

QUOTINGS FROM MODERN TEXT ABOUT NETRISOOLAI VATHAM

.....There is some indication of a higher incidence of sinusitis in patients with enlarged tonsils.....

Eric Gershwin MD, Gary A. Incaudo MD, editors. Diseases of the Sinuses .1st ed.

University of California at Davis: Human press, New Jersey; 1996. P.No. 502

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“....நித்திரையும் மயக்கமாகும்....”

QUOTINGS FROM MODERN TEXT ABOUT NETRISOOLAI VATHAM

.....*fatigue*.....waking up *tired*.....

Daniel L. Hamilos, Fuad M. Baroody, editors. Chronic Rhinosinusitis Pathogenesis and Medical Management. 1st ed. Informa Healthcare USA: New York; 2007. P.No-2

“..... The respiratory passages are clogged as a result of sinus infection; it may lead to Sleep Apnea. This results in lower levels of oxygen absorbed in the blood stream during sleep. Symptoms being *feeling restlessness, daytime Sleepiness* and *Fatigue* and/or occasional neurological arousal.....”

P.No. 39, Kochar's Clinical Medicine for Students - Dario M. Torre,
Geoffrey C. Lamb, Jerome Van Ruiswyk

“.....Chronic sinusitis appears to be commonly associated with *fatigue* and bodily pain....”

- P.No. 88, Chronic fatigue syndrome: advances in epidemiologic, clinical, and basic...- Roberto Patarca- Montero

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“...தேறான சிரசினிற் குத்தலுண்டாம்....”

QUOTINGS FROM MODERN TEXT ABOUT NETRISOOLAI VATHAM

.....Intra cranial complications of sinusitis include meningitis, epidural abscess, subdural empyema, venous sinus thrombosis, and brain abscess. The *frontal sinus* have the highest rate for intracranial **complications**. Meningitis is generally regarded as the most common intracranial complication of sinusitis.....

Thomas V. Mc Caffrey, MD., Ph.D. Rhinologic Diagnosis and Treatment. Thime: New York: 1997. 299

.....Sinus headaches cause a dull, deep, throbbing pain in the front of head and face.

- “The Diagnosis and Management of Acute and Chronic Sinusitis”. *Primary Care: Clinics in Office Practices* 35 (1): 11-24. Doi: 10.1016/j.pop.2007.09.002. PMID 18206715

READING BETWEEN THE LINES OF YUGI VAIDYA CHINTHAMANI

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“...வாறான நயனந்தான் புருவ மற்றை மத்தியத்திற் குடைந்துமே முக்குத் தண்டு...”

In the first line of poetry about Netrisoolai vatham, (one among the 80 types of Vatha diseases) Sage Yugimunivar explains about the head ache and its nature. There will be throbbing pain in in between eye brows, fore head and nose. Headache is a common non specific symptom in sinusitis. The ducts that connect the sinuses to the back of the nose become inflamed, the ability of sinuses to drain is decreased, and pressure builds with in the affected sinus. Underlying pathology in sinus affections are associated swelling and inflammation of the lining of the sinuses, possibly resulting in increased mucus and fluid secretion. This increase in fluid and pressure causes the pain in sinus affections.

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“...குடைந்துமே கையோடு கால்கள் ரண்டும்....”

“...ஆறான அங்கமெல்லாங் கடுப்புண்டாகும்....”

In Netrisoolai vatham, withering may be mainly due to deranged vatha humour.

In sinusitis, withering may be related to reduced oxygen in blood or may be due to activation of inflammatory network in the body.

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“..கூறான குரலினைத்தான் பற்றி நொந்து..” “...அழுகுரலாய்....”

Post nasal drip is mucus overproduction from sinusitis that flows to the throat and irritates throat tissue (irritation and inflammation of pharynx). Sore throat is inflammation of throat tissue by post nasal drip.

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“...நித்திரையும் மயக்கமாகும்...”

In sinusitis, withering may be related to reduced oxygen in blood or may be due to activation of inflammatory network in the body. It causes fatigue and sleepiness.

YUGI VAITHYA CINTHAMANI PHRASES (NETRISOOLAI VATHAM)

“...தேறான சிரசினிற் குத்தலுண்டாம்..”

Sage Yugimuni highlighted the areas affected in the disease Netrisoolai vatham. The nature of pain is mentioned to be severe and throbbing type. This is supported by the modern text “The Diagnosis and management of acute and chronic sinusitis” that Sinus headaches cause a dull, deep, throbbing pain in the front of head and face and worse pain in the morning(because mucus has been collecting and draining all night)”. The affection of frontal sinus causes pain in forehead and eyebrows.

5. REVIEW OF LITERATURE - NETRISOOLAI VATHAM

As per Yugi vaidya chinthamani - 800, Netrisoolai vatham is one among the 80 types of vatha diseases. The term “Netri” means forehead and “soolai” means pain and vatham denotes disease due to derangement of vatham. In our body face and scalp are the major areas getting direct exposure to the external environment. So any change in the external environment like climate change, pollution, etc affect our body especially face and head. Also carrying heavy objects over the head, over exposure to ultra violet rays, trauma of the head, etc. will finally land up diseases due to derangement of vatham.

INTRODUCTION TO VAATHAM

According to T.V Sambasivampillai, the Vali is defined as one among the three humors (life forces), occupying the region below navel. It is responsible for all movements in the body. It spreads throughout the body and cause respiration, hunger, thirst etc. It is the energy or power that prevails all over the body and keeping various tissues in good condition. Vali is soft, fine and temperature (coolness) which could be felt by touch. It is the base for the genesis of other two humors.

THE SITES OF VALI

"நெளிந்திட்ட வாதமபா னத்தைப் பற்றி
நிறைந்திடையைச் சேர்ந்துந்திக் கீழே நின்ற
குளிந்திட்ட மூலமதூ டெழுந்து காமக்
கோடியிடையைப் பற்றியெழுங் குணத்தைப் பாரே".
“குணமான வெலும்பைமேற் றொக்கை சாடி
நிறைவாகி மாங்கிச மெல்லாம் பரந்து
கால்காட்டி வாதமெங்குங் கலக்குந் தானே”.

- வைத்திய சதகம்

According to Vaidyasathakam, Vali dwells in the following places: Umbilicus, rectum (abaaan), abdomen, anus, bones, hip-joint, skin, navel plexes, joints, hair follicles and muscles.

“அறிந்திடும் வாத மடங்கு மலத்தினில்”

- திருமூலர்

"நாமென்ற வாதத்து கிருப்பிடமே கேளாய்
நாபிக்குக் கீழென்று நவில வாகும்".

- யூகி வைதிய சிந்தாமணி - 800

According to Sage Tirumoolar and Yugimuni, the places of Vali are anal region and the region below the navel.

"அறிந்திடும் எல்லாம் ஒன்றாய் ஆவிக்கும் அதிர்வானந்த
செறிந்திடும் வன்னிதானும் மூடிடும் கண்ணிலே தான்
பறிந்திடும் வாய்வு தானும் பரிசிக்கும் எங்கும் பாரே".

- அகத்தியர் வைத்திய காவியம்

According to Vaithiya Kaviyam, the Vali exists all over the body.

"அபானமுத லுந்திவரை வாதநிலை
உந்தியின் மேல் மார்பு மட்டும் பித்தநிலை".

- அனுபோக வைத்திய பிரம ரகசியம்

According to Anupoga Vaithiya Brama Ragasiyam, the Vali exists between the Umbilicus and navel region.

CHARACTERS OF VALI

SL.NO.	OWN CHARACTER	OPPOSITE CHARACTER
1	Rough(Kadinam)	Miruthu(Soft)
2	Varatchi(Dry)	Pasumai(Unctious)
3	Elasu(Light)	Baluvu(Heavy)
4	Kulirchi(Cold)	Akini(Hot)
5	Asidha(Unstable)	Sthiram(Stable)
6	Anuthuvam(Subtle)	Katti(Solid)

Table-9 Characters of Vali

Properties of Vali

"ஒழுங்குடனே தாதேழ் மூச்சோங்கி இயங்க
எழுச்சுபெற எப்பினியுமாற்ற - எழுந்திரிய
வேகம்புலன்களுக்கு மேவச் சுறுசுறுப்பு
வாக்கலாளிக்கும் மாந்தர்க்கு வாயு".

- மருத்துவ தனிப்பாடல்

The following are the inherent properties of Vali.

- ✓ To stimulate.
- ✓ To respire.
- ✓ To activate the Body, mind and the intellect.
- ✓ To operate the fourteen different kinds of natural reflexes/ urges.
- ✓ To activate the seven physical constituents in functional co-ordination.
- ✓ To strengthen the five sense organs.
- ✓ In the above processes Vatham plays a vital role to assist the body functions.

CLASSIFICATION OF VATHAM IN CLASSICAL LITERATURE :

S.NO	NAMES OF THE BOOKS	TYPES OF VATHAM
1	Yugi vaithiya cinthamani	80
2	Astanga sangiramam	85
3	NoiNaadal Noi MudalNaadal vol 2	81
4	Theraiyar vaagadam	81
5	Dhanvantri vaithiyam	81
6	Jeeva rakshamirtham	80
7	Agathiyar -2000	80
8	Boharvaithiyam	84
9	Agathiyar kurunaadi	84
10	Agathiyar rathnachurukkam-500	84
11	Pararasasekaram	80

Table-10 Classical Literature

CAUSES FOR VATHA DISEASES :

"என்னவே வாதந்தா னெண்ப தாகும்
மிகுத்திலே மனிதர்ளுக் கெய்து மாறு
பின்னவே பொந்தனையே சோரஞ் செய்து
பெரியோர்கள் பிராமணரைத் தூOE ணித்தும்
வன்னவேவச் சொத்திற் சோரஞ் செய்து
மாதாபிதா குருவை மறந்து பேர்க்கும்
கன்னவே வேதத்தை நிந்தைசெய்த பேர்க்குங்
காயத்திற் கலந்திடுமே வாதந் தானே".

“தானென்ற கசப்போடு துவர்ப்பு ரைப்பு
சாதமாய் மிஞ்சுகினுஞ் சமைத்த வன்னம்
ஆனென்ற வாறினது பொசித்த லாலும்
ஆகாத் தேறலது குடித்த லாலும்".

பானென்றபகலுறக்க மிராவி ழிப்பு
பட்டினியெ மிகவுறுதல் பார மெய்தல்
தேனென்ற மொழியாற் மேற் சிந்தை யாகில்
சீக்கிரமாய் வாதமது செனிக்குந் தானே"
ஆணான வரன்றனெளயெ மதியா மாந்தர்
அகதிபர தேசியர்கட் கன்ன மீயார்
கோனான குரமொழியை மறந்த பேர்கள்
கொலைகளொவு பொய்காமங் குறித்த பேர்க்கு
ஊனான சடந்தன்னில் வாதம் வந்து
உற்பவிக்கும் வேதத்தில் லுண்மை தானே

- யூகி வைத்திய சிந்தாமணி - 800

According to Yugi Vaithya Chinthamani, those who are squandering money, insulting elders, abandoning or forgetting the parents, blaspheming the Holy books, not respecting the divine gifts, having wickedness in their mind and those with day slumber and staying back at night will attract Vali diseases. Increased intake of bitter taste, astringent, hot taste, increased intake of water, excessive starvation, sexual indulgence will produce Vali diseases.

தொழில் பொறுகைப்புக்கார்த் த்ல்துவர்த்தல் விஞ்சுகினுஞ்சோறும்
 பழையதாம் வரகு மற்றைப் பைந்தினை யருந்தி னாலும்
 எழில்பெறப் பகலு றங்கி இரவினி லுறங்கா தாலும்
 மழைநிகர் குழலி னாளே வாதங்கோ பிக்குங் காணே
 காணவெ மிகவுண் டாலுங் கருதுபட் டினிவிட்டா
 மானனை யார்கண் மோக மறக்கினு மிகுந்திட்டாலும்
 ஆணவ மலங்கடம்மை யங்ஙனே விடாத தாலும்
 வானுதன் மடநல் லாளே வாதங்கோ பிக்குங் காணே.
 பாரினிற் பயப்பட்டாலும் பலருடன் கோபித் தாலும்
 காரெனக் கருதி யோடிக் கழுமரத் துரத்தி னாலும்
 ஏர்பெறு தனது நெஞ்சின் மிகத்துக்க மடைந்தாலும்
 பாரியகாற்றி னாளும் படரினும் வாதங் காணும்
 காலங்கண் மாறி யுண்ணும் காரியத் தாலுந் தண்ணிர்
 சாலவெ யருந்தி னாலுங் சந்தியி லுட்கார்ந் தாலும்
 கோலமாம்புளிப்பு நெய்மை குறைவற வருந்தி னாலும்
 வாலவார் முலைநல் நாளளேவாதமுற் பவிக்குங் காணே
 உற்பவித் தெழுமப் போதே யுயர்புறத்துடியைப்பற்றித்
 தெற்பறக் குடைந்து நோவுஞ் செய்துமேல நோக்கு மாகில்
 விற்பொலி நுதலி னாளே மேலிடுங் குணங்க டம்மில்
 சொற்பெறு வாதம் வண்ணஞ் செய்யகா லடியைப்பற்றி
 தெரிந்துமுன் சொன்ன வண்ணஞ் செய்யகா லடியைப் பற்றி
 மாந்தனைப் போற்றி மிர்த்துமற்றுமேல் நோக்கு மாகில்
 அரன்றனைத் துதியா மாந்த ரனுசரிக் கின்ற கோயில்
 சரிந்திடுங் குழலாய் வாதங் குடிபுகுங் சாற்றுங் காலே

- பரராசசேகரம்.

Parasasekaram also states the same that is also stated in Yugi Vaithiya Chinthamani like increased intake of varagu, thinai, ghee and kaippu taste, increased intake of food, increased fear , excessive anger, deep sadness, increased exposure to forcible flow of air, altered dietary timings etc.

"கானடையாலச் சத்தாற் கடும்பசி யார்கோ பத்தால்
ஊன்மி லிரவில் வார்த்தை யுரம்பெற விரைக்க லாலுண்
ஆன்பின்முனிவால் மாரு தடுத்தடுத் துரைக்குஞ் சொல்லால்
ஈன்மி லிகழ்ச்சி யான விகல்வாத கோபங் காணும்"

- அங்காதிபாதம்

According to Angaathipatham, increased starvation and increased anger will produce vali disease.

"வெய்யில் நடக்கை யாலும் மிகந் தண்ணிர் குடிக்கை யாலும்
செய்யிழை மகளி னாளைச் சேர்ந்தனு பவிக்கை யாலும்
தையவே வாத ரோகஞ் சனிக்கும்மெனறறிந்து கொள்ளே"

- தேரையர் வாகடம்

According to Theraiyar Vagadam, walking under hot sun, increased sexual desire, increased intake of food and bitter gourds will produce Vali disease.

வாதநோக்கான இயல்பு: (Characteristic features of Vatha)

"வாதமே கதித்த போது வாயுவமெழும்புங் கண்டீர்
வாதமே கதித்த போது வாயுவந்திடுஞ் சன்னி தோஷம்
வாதமே கதித்த போது வல்லடுன் மெலிந்து கொல்லும்"

- அகத்தியர் சிகிச்சா ரத்னதீபம்

According to Agasthiyar Sikicha Rathna Deepam derangement in Vali will produce delirium and emaciation.

"வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோதுகட்கு ரோகம் சுரமுண்டா மிருமலுமா முறங்காதென்றும்
ஓதரிய வாதமனலாகு நடுக்கமுண்டாம் பொருள்களயர்ந்த
தீதெனவே நரம்பித்து சந்துகள் தோறுங்கடக்குந் தினமுந்தானே"

- தேரையர் வாகடம்

According to Theraiyar Vagadam, deranged vali produce loss of appetite, fever, cough, insomnia, shivering of the body, nervine disorders, and pain in all the joints.

வாதங்கூறு விருத்தம்:

" சொல்லாவே வாதமது மீறிற்றானால்
சோர்வடைந்து வாய்வினால் தேதகமெங்கும்
மெல்லவே கைகால் சதியுண்டாகும்

மெய்மடங்கும் நிமிரவொண்ணாதிமிருண்டாகும்
வெல்லவே பொருமும்வயிறுளைக்கும்
விரும்பன்னஞ் செல்லாதுவிந்து நஷ்டம்
கொல்லவே நாப்புளிக்கும் கழிச்சலுண்டாம்
கூறினார் மலையமுனி கூறினாரே
வாதமீறினால் வாயுவினால் தேகமெல்லாங்
குத்துங் கால்கை சந்து பொருத்துக்கள் உளையும்
கால்கையொரு பக்கத்தில் முடங்கும் குனிந்தால்
நிமிரவொட்டாது திமிருண்டாகும் உடல் பொருமும்
குடல்புரட்டும் அன்னங்சுருக்கும்,வயிறு மந்திக்கும்
பொருமும்,மலசலங்கட்டும் அபானஞ்சுருங்கும்
நாவு புளிக்குந் தாது நட்டமாகுங் கழிச்சலுண்டாகும்”.

According to Vatha Kooru Virutham, deranged Vali produces fatigue, lethargy, loss of appetite, abdominal discomfort, diarrhea, constipation, cough, insomnia and joint pain.

ரோகிகளின் தேகமுதலான குறிகள் :

"அறைந்தோம் வாதரோகியுடல் அலர்கண்முகமும்பல்மலமும்
நிறைந்த விழியில் நீர்வடியும் நீண்ட நாயு கறுத்திட
திறைந்த முள்ளாய் தானிருக்கும் சிருநீர் பொருமிகறுத்துவரு
முறைந்த நீருங் கறுகறுத்துமுரையாய் ரோக முண்டாமே"

Physical nature of vatha constitution is dark coloured fece, eye, teeth,and stool.

கால இயல்பு:(Environmental Factors)

வாதவர்த் தன கால்மேதோ வென்னில்
மருவுகின்ற ஆனி கற்கட மாதம்
ஆதனைப் பசியோடு கார்த்திகை தன்னில்
ஆடருமே மற்ற மாதங்கள் தன்னில்
போகவே சிமிக்கின்ற காலமாகும்

- யூகி சிந்தாமணி

Vali disease will be precipitated in the months from Aani to Karthigai (June to December)

பதுமத்தைப் பூக்க வைக்கும் பானுமிகக் காயும்

முதுவேனி லிற்புவிற்றீர் முற்றும் - கதுமென

வற்றும் கபமி கும்வாயுமிகும் வாழ்மாந்தக்

குற்ற நலிக் கேதிதென் றோது.

- சித்த மருத்துவாங்க சுருக்கம்

In Mudhuvenilkaalam (Late summer), the increased solar radiation increases the evaporation of water content in the world, at the same time these similar actions on the body produces increased production of mucus for digestion and develop the derangement of vali disease.

உணவுவகைகள்

வளி தரு காய்கிழங்கு வரைவிலா தமில்ல கோழை

புளி தயிர் போன்மிகுக்கு முறையிலா வுண்டி கோடல்

குளிர்தரு வளியிற் றேகங்குனிப்புற வுலவல் பெண்டிர்

குளிதரு முயக்கம் பெற்றோர் கடிசெயல் கருவியாமல்.

- சபாபதி கையேடு

According to Sababathikaiyedu, increased intake of tubers, increased exposure to wind, living in higher altitudes, increased sexual desire, and increased exposure to chill weather will cause Vali disease.

"தொழில் பெறு கைப்புக்கார்த்தல் துவர்த்தல் விஞ்சுகினுஞ்சோறும்

பழையதாம் வரகு மற்றைப் பைந்தினையருந்தினாலும்

எழில் பெறப்பகலுறங்கி இரவினிலுங்காதாலும்

மழை நிகா குழலினாலே வாதங்கோ பிக்குங்கானே."

- பரராச சேகரம்

According to Pararaasasekaram, increased intake of bitter taste, astringents, sour tastes, increased intake of old cooked rice, day slumber and staying back at night will increase Vali.

பழக்க வழக்கங்கள் (Habits)

வெய்யிலில் நடைக்கையாலும் மிகத்தண்ணீர் குடிக்கையாலும்
செய்யிழை மகளினரைச் சேர்ந்தனுப விக்கையாலும்
பையனே உண்மையாலும் பாகற்காய் தின்கையாலும்
தையலே வாதரோகம் சனிக்குமென்றறிந்து கொள்ளே

- தேரையர் வாகடம்

Excessive walking in hot sun, excessive intake of water bitter guard increased sexual desire, may play a role in disturbing the normal function of Vali.

FUNCTIONS OF DERANGED VALI:

(Altered function of Vali)

"வாதமே கதித்த போது வாயுவு மெழுப்பி மீளும்
வாதமே யிரும லாகித் தொடந்திடுஞ் சன்னி வாதம்
பேதமே செய்கி ராணி பெறுவயி றுதா தோஷம்
போதவே தோன்று மென்று பொருந்தவே முனிவர் சொன்னார்
வாதமே முதலா நாடி வாதமே தூல காயம்
வாதமே பெலவா னாகும் யழலை வேண்டும்
வாதமே மந்தம் பற்றும் வாதமே சீத காலம்
வாதமே யுடற்கு ளிர்ச்சி வாதமே மூலமாமே
வாதமே வாயு வாகும் வாதமே காலிற் சேரும்
வாதமே நன்னி யோடு மருவிடில் வலியு முண்டாம்
வாதமே விடியப்பத்து வாதமே சாயங் காலம்
வாதமே புளிப்புவாங்கும் வாதமுந் தளர்ச்சி காலம்

- பரராசசேகரம்

According to Pararasasekaram the deranged Vali will produce cough, delirium, diarrhoea and abdominal distension.

"வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோதுகட்கு ரோகம் சுரமுண்டாம்
மிருமலுமா முறங்காதென்றும்"

- தேரையர் வாகடம்

According to the Sage Theraiyar, the deranged Vali produces reduced appetite, fever, cough, and insomnia.

"செய்யவே வாதத்தால் வருநோய் சொல்வேன்
 சிக்கிமல சலங்கடுத்த லுளைதல் குத்தல்
 நையவே ககறுத்துக் கண்ணீர் வீழ்ந்து
 நாச்சிதறி வெடித்துவாய் திக்கி பேசல்
 மெய்தடித்து மிகநோதல் பொருமல் கொள்ளல்
 விந்துவலி தான் குறைந்து மந்தமாதல்
 பையவே குளிர்ந்திருத லான் வெல்லாம்
 பலவாகக் கண்டறிந்து சிந்திப்பாயே"

- அங்காதிபாதம்

பாங்கான வாதந்தான் மீறுமாகிற்
 பருவயிறு சுவாசமுடன் குத்துக்கோழை
 நீங்காத பிடிப்புவுளை வாயு தொந்தம்
 நீர்வெடித்துப் பாய்தல் மந்தம் விடமிப்பாதல்
 தூங்குசன்னி வாதசுர மதனிற் தோடம்
 தொகுத்த கிரா ணிக்கழிச்ச லுதர தோடம்
 வாங்குபல வலிகுளிர்ச்சி குன்மவாத
 மலசலகட் டிடல்வாத வந்திப்பாமே.

- அங்காதிபாதம்.

According to Angaathipatham the deranged Vali produces constipation, scanty micturition, and increased lacrimation, with darkening of eyes, fissures in tongue, dysarthria, flatulence, abdominal distension, and cough with expectoration, indigestion and diarrhoea.

“காணப்பா வாதமீறில் கால்கைகள் பொருந்து நோவும்
 பூணப்பா குடல்புரட்டும் மலசலம் பொருமிக் கட்டும்
 ஊணப்பா குளிர்நங் காய்ச்சல் உடம்பெல்லாம் குத்துவாய்வு
 வீணப்பா குதமிறுக்கும் வியர்வையும் வேர்க்கும் தானே”.

- அகத்தியர் வைத்திய காவியம் 1500

According to Agathiyar vaithiya kaaviyam, the deranged Vali produces pain in the joints of the hands and legs, flatulence, constipation, scanty micturition, fever with rigor, generalized body pain and increased sweating.

“தக்க வாயு கோபித்ததால் சந்துவுளைந்து தலைநோவா
மிக்க மூரி கொட்டாவி விட்டங் கெரியு மலங்கட்டும்
ஒக்க நரம்பு தான்முடங்கு முலர்ந்துவாநீ ருறிவரும்
மிக்க குளிரும் நடுக்கமுமாம் மேனி குன்றி வருங்காணே”.

- தேரையர் வாகடம்

According to Theraiyar vagadam, the deranged Vatham produces pain in the joints, headache, constipation, increased salivation, chills with rigor, loss of normal complexion.

ஆகங்கறுக்குநோ யாகந் துடிக்கும்
ஆறாதீ யென்னமெய் யேகங் கொதிக்கும்
ஆருமெய் வியர்தியிர் வீமந்தம் வாய்மூச்சு
ஆகுமேயிது வாதமேலினி.

- தேரையர் கரிசல்

According to Theraiyar karisal, the deranged vatham produces blackish discoloration of body, feverishness increased sweating, indigestion and dyspnea.

மேவியவாதஞ் செய்யுங் குணந்தன்னை வியம்பக் கேளாய்
தாவியே வயிறு தந்தஞ் சந்துகள் பொருத்து நோவாஞ்
சீவிய தாதுநாசஞ் செறுத்துடன் சிறுநீர் வீழுங்
காவிய கண்ணி னாளே மலமது கருகிவிழும்.

- அகத்தியர் வாத காவியம் 1000

According to Agathiyar vatha kaaviyam and kannusamiyam the deranged Vatham produces abdominal discomfort, pain in joints, oliguria, dysuria, constipation flatulence.

Functions of deranged Vatham (Vali) (Abnormal functions of Vatham)

- Body pain
- Pricking pain
- Pain as though the body is tightly bounded by cords
- Nervous debility
- Tremor
- Rigidity
- Dryness
- Remorseless

- Debility (Emaciation)
- Throbbing pain (Restrictions of movements)
- Trauma
- Dislocation of joint
- Weakness of functional organs and loss of functions
- Loss of taste sensation or preparation of Astringent taste only
- Constipation
- Concentrated urine
- Thirst
- Sensation of fragility in the foreleg and thigh
- Numbness and pricking pain in the bones
- Goose skin
- Stiffness of upper and lower limbs and black
- The skin, eyes, faeces and the urine are dark in colour.

KINDS OF VATHAM-10

முறைமையாம் பிராணனோ டபானன் வியானன்
மூர்க்கமா முதானனோடு சமான னாகன்
திறமையாய் கூர்மனோடு கிருகி ரன்றான்
தேவதத்த னொடுதனஞ் சயனு மாகும்.

- யூகி வைத்திய சிந்தாமணி 800

Even though the vatham is a single functional unit, it has got different forms and actions.

10 Different Kinds of Vatham

- ✓ Praanan (Respiratory functions)
- ✓ Abaanan (Excretory functions)
- ✓ Viyaanan (Perfusion of oxygen & nutrients)
- ✓ Samaanan (Homeostatic functions)
- ✓ Udhaanan (Reverse peristalsis)
- ✓ Naagan (Higher intellectual functions)
- ✓ Koorman (Constrictory functions)
- ✓ Kirukaran (Secretory functions)
- ✓ Devathathan (Mental & physical sluggishness)
- ✓ Dhananjeyan (Bloaters of the body)

Vatha disease has so many classification. Netrisoolai vatham is one of the 80 types of vtha disease.

The dissertation subject Netrisoolai vatham is from Yugi Vaidya Chinthamani.

நெற்றிசூலை வாதம்

“வாறான நயனந்தான் புருவ மற்றை

மத்தியத்திற் குடைந்துமே மூக்குத் தண்டு

கூறான குரலினைத்தான் பற்றி நொந்து

குடைந்துமே கையோடு கால்கள் ரண்டும்

ஆறான அங்கமெல்லாங் கடுப்புண்டாகு

மமுகுரலாய் நித்திரையு மயக்கமாகுந்

தேறான சிரசினிற் குத்தலுண்டாம்

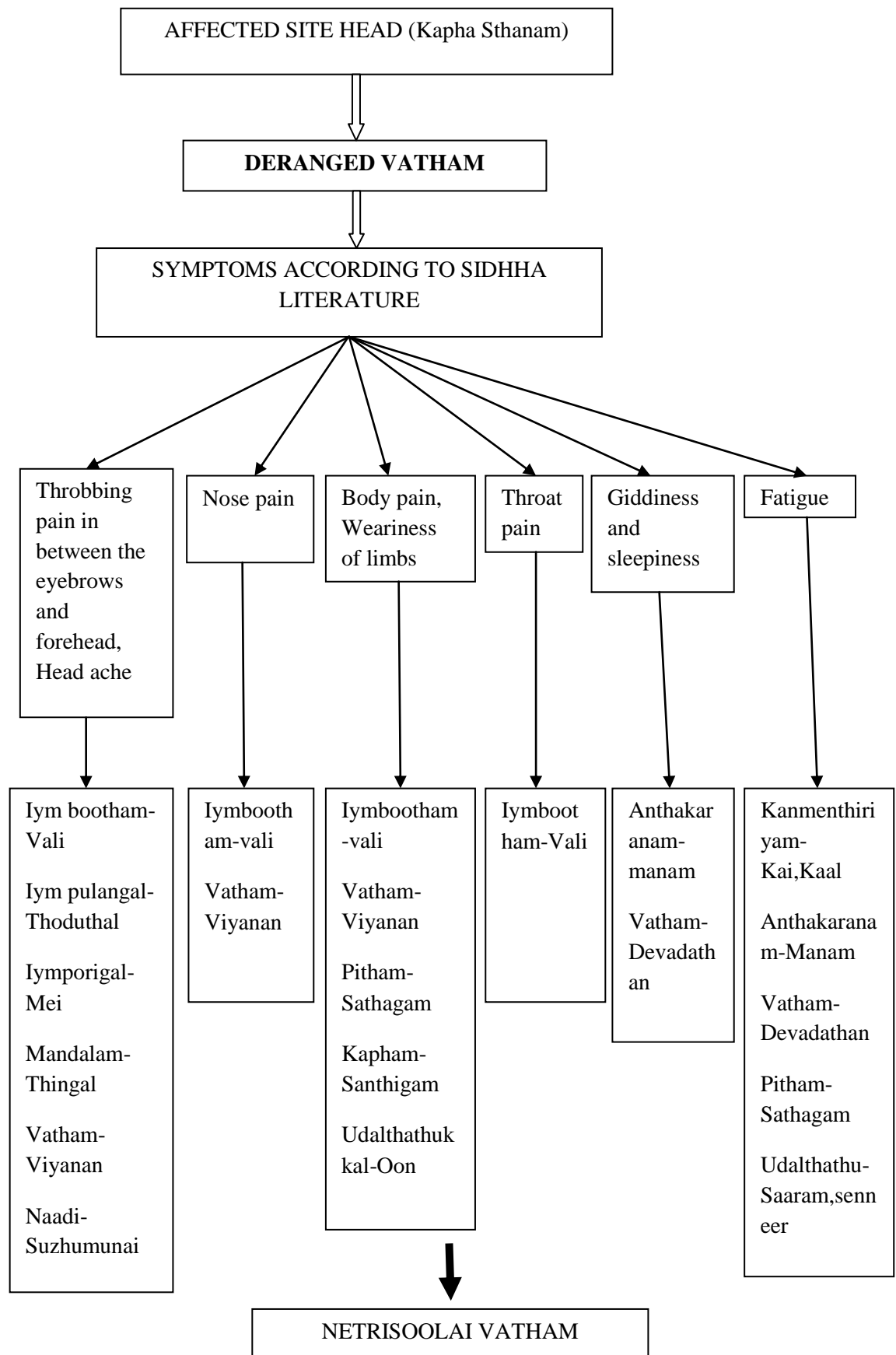
சிறுநெற்றி சூலையின்றன் செய்கைதானே”

- யூகி வைத்திய சிந்தாமணி 800, பக்க எண் - 84

CLINICAL FEATURES

- ✓ Throbbing pain in between eyebrows and forehead
- ✓ Headache
- ✓ Pain in nose
- ✓ Body pain/weariness of limbs
- ✓ Throat pain
- ✓ Giddiness
- ✓ Sleepiness
- ✓ Fatigue.

6. PATHOGENESIS OF NETRISOOLAI VATHAM



The basic constitution of the body is made up of 96 Thathuvams. Due to diet and other activities 96 Thathuvams get deranged and result in diseases, either pertaining to body or mind.

DERANGED 96 THATHUVAS ARE AS FOLLOWS

1. IYMBOOTHAMS (FIVE ELEMENTS)

Vali - Vali (aakayam) is the constituent of vatha humour which when affected produces pain in the body. In Netrisoolai vatham, Vatha humour is affected which presents as headache, especially throbbing pain in forehead, in between the eyebrows and pain in nose.

2. IYMPORIGAL (PENTA SENSORS)

Mei - Tenderness in forehead, throbbing headache. Vali is affected in Netrisoolai vatham. So in this disease, mei which is a component of vali is affected and produces symptoms like throbbing headache.

3. IYMPULANGAL (FUNCTIONS OF PENTA SENSORS)

Thoduthal (Touch) - Throbbing pain in frontal area present. Affected vali (air) element produces painful conditions in this disease.

4. KANMENTHIRIYAM/ KANMAVIDAYAM (MOTOR ORGANS)

Vali is affected in this disease. So it produces body tiredness.

5. ANTHAKARANAM (COMPONENTS OF MIND)

Manam - Depression due to chronic illness.

6. NAADI (DIFFERENTIAL PULSE PERCEPTION)

Suzhumunai - Headache present.

7. ADHARAM (STATIONS OF SOUL)

Aakinai - Pain present in forehead. Aakinai aadharam is located in the head.

So any factor affecting the Aadharam will in turn affect the organs under control of it. In Netrisoolai vatham, Akinai is affected and it results in throbbing pain in forehead and pain in nose.

8. MANDALAM (BODY ZONE)

Thingal Mandalam - Throbbing pain in head. So in Netrisoolai vatham, this thingal mandalam is affected.

9. GUNAM (CHARACTER)

People with **Thamasa gunam** affected more compared to Sathvam and Raasatha gunam. It is because disobedience, increased sexual indulgence, increased appetite, killing living things, anger, etc which are the basic qualities of Thamasa gunam people increases vatha humour and other humours and finally land in diseases of any type including Netrisoolai vatham.

10. PADHINAANGU VEGANGAL (Natural Urges/Reflexes)

Suppression of,

Thummal (Sneezing) - Headache

Malam (Stools) - Headache

Vizhineer (Tears) - Head disorder and Sinusitis (Headache)

11. DERANGEMENT UYIR THATHUKKAL (HUMORAL OR TRIDOSHA PATHOLOGY)

Panchaboothams manifests in the body as three vital forces, Vatham, Pitham, Kabam

DERANGEMENT OF VATHAM OR VAYU

In Netrisoolai vatham, primarily affected vayukkal are Viyanan, Samaanan and Devathathan.

Types of vatham	Derangements
Viyanan	Headache, Weariness of limbs
Samanan	Headache, Weariness of limbs
Devathathan	Fatigue

Table-11 vatham derangement

DERANGEMENT OF PITHAM

In Netrisoolai vatham, primarily affected Pitham components are saathagapitham.

Types of pitham	Derangements
Saathagam	Difficulty to concentrate work due to weariness of limbs

Table-12 Deranged Pitham

DERANGEMENT OF KABAM

In Netrisoolai vatham, primarily affected kabam are Avalambagam and Santhigam

Types of Kabam	Derangements
Avalambagam	Santhigam affected
Santhigam	Weariness of limbs

Table-13 - Deranged Kabam

12. DERANGED UDAL THATHUKKAL

Saaram - Fatigue

Senneer - Fatigue

Oon - Weariness of limbs

13. KOSAM (BODY SYSTEMS)

a) Annamaya kosam – Affected

Anamaya kosam is affected because 7 Udal thathukkal forming the Kosam are affected.

b) Pranamaya kosam-Affected

Pranamaya kosam is affected because Kanmenthiriyangal forming this kosam are affected.

c) Manamaya kosam – Affected

It is affected because patient will have fear due to illness.

d) Vignaanamaya kosam – Affected

It is affected because Gnanaenthiriyangal forming this kosam are affected.

e) Aanandhamaya kosam – Affected

It is because patient will be unhappy due to illness.

7. DIFFERENTIAL DIAGNOSIS

7.1 DISCUSSION OF DIFFERENTIAL DIAGNOSIS BETWEEN NETRISOOLAI VATHAM AND KABALA IYA AZHAL

நெற்றிசூலை வாதம்

“வாறான நயனந்தான் புருவ மற்றை
மத்தியத்திற் குடைந்துமே மூக்குத் தண்டு
கூறான குரலினைத்தான் பற்றி நொந்து
குடைந்துமே கையோடு கால்கள் ரண்டும்
ஆறான அங்கமெல்லாங் கடுப்புண்டாகு
மமுகுரலாய் நித்திரையு மயக்கமாகுந்
தேறான சிரசினிற் குத்தலுண்டாம்
சிறுநெற்றி சூலையின்றன் செய்கைதானே”

- யுகி வைத்திய சிந்தாமணி

As per Yugi Vaidya Chinthamani, the clinical features of Netrisoolai vatham are throbbing pain in between eyebrows and vertex, weariness of limbs, throat pain, sleepiness and fainting.

கபால ஐய அழல்

“சென்னியின் மீது பித்த சேற்பனஞ் செய்கு ணங்கேள்
மன்னிய புருவ நெற்றி வருமுச்சி யிவற்றிற் குத்தும்
முன்னமே விழிநீர் பாய்ந்து சிவந்திடு மூக்கு நோவாம்
தன்னுடல் வெதும்பி நெஞ்சிற் சலமுறைந் திருமுந் தானே”

- பரராசசேகரம்-சிரரோகம்

As per Pararasasegaram, the clinical features of Kabaala Iya Azhal are throbbing pain in forehead, eyebrows and vertex, redness and watering of eyes, nasal disorders, fatigue and cough.

SIMILARITIES	
NETRISOOLAI VATHAM	KABAALA IYA AZHAL
HEADACHE	
<p>“....வாறான நயனந்தான் புருவ மற்றை மத்தியத்திற் குடைந்துமே....”</p> <p>Pain in between eyebrows</p> <p>“....தேறான சிரசினிற் குத்தலுண்டாம்.....”</p> <p>Pain in the head</p>	<p>“....மன்னிய புருவ நெற்றி வருமுச்சி யிவற்றிற் குத்தும்....”</p> <p>Throbbing pain in eyebrows, frontal area and vertex.</p>
NASAL PAIN	
<p>“...மத்தியத்திற் குடைந்துமே மூக்குத் தண்டு..”</p> <p>Pain in nasal septum</p>	<p>“....முன்னமே விழிநீர் பாய்ந்து சிவந்திடு மூக்கு நோவாம்...”</p> <p>Nasal diseases</p>
WEARINESS OF BODY	
<p>“.....குடைந்துமே கையோடு கால்கள் ரண்டும்....”</p> <p>“...ஆறான அங்கமெல்லாங் கடுப்புண்டாகும்...”</p>	<p>“...தன்னுடல் வெதும்பி நெஞ்சிற் சலமுறைந் திருமுந் தானே...”</p> <p>Fatigue</p>

DISSIMILARITIES	
NETRISOOLAI VATHAM	KABAALA IYA AZHAL
<p>“..அழகுரலாய் நித்திரையு மயக்கமாகும்...”</p> <p>Sleepiness</p> <p>Giddiness/ Fainting</p>	<p>“....முன்னமே விழிநீர் பாய்ந்து சிவந்திடு மூக்கு நோவாம்...”</p> <p>Redness and watering of eyes</p> <p>“....தன்னுடல் வெதும்பி நெஞ்சிற் சலமுறைந் திருமுந் தானே....”</p> <p>Cough</p>

7.2 KABAALA PARISA VALI

கபால பாரிசவளி

“ஓதிய கபாலந் தன்னி லோர்புறந் திமிர்த்து வேர்க்கும்
வேதனை வரவே குத்தும் விதியிடை புருவத்துள்ளும்
ஊதையுண்டாகும் நாளுமொழுவிழுஞ் செவியிற் புண்ணாம்
தீதுடன் றலைவறண்டு பிடரிநோந் தீரா தன்றே”

- பரராசசேகரம்-சிரரோகம்

As per Pararasasekaram, the clinical features of Kabaala Parisa Vali are throbbing pain in eyebrows and vertex, numbness and sweating in one side of scalp, ulcer in ear and dryness of scalp.

SIMILARITIES	
NETRISOOLAI VATHAM	KABAALA PARISA VALI
THROBBING HEADACHE	
<p>“....வாறான நயனந்தான் புருவ மற்றை மத்தியத்திற் குடைந்துமே....”</p> <p>Throbbing pain in between eyebrows and head</p>	<p>“...ஓதிய கபாலந் தன்னி லோர்புறந் திமிர்த்து வேர்க்கும் வேதனை வரவே குத்தும் விதியிடை புருவத்துள்ளும்....”</p> <p>Throbbing pain in eyebrows</p>

DISSIMILARITIES	
NETRISOOLAI VATHAM	KABAALA PARISA VALI
<p>“..அமுகுரலாய் நித்திரையு மயக்கமாகும்...”</p> <p>Sleepiness</p> <p>Giddiness/ Fainting</p> <p>“.....குடைந்துமே கையோடு கால்கள் ரண்டும்....”</p> <p>“...ஆறான அங்கமெல்லாங் கடுப்புண்டாகும்...”</p> <p>Body pain/ weariness of the body.</p>	<p>“...ஓதிய கபாலந் தன்னி லோர்புறந் திமிர்த்து வேர்க்கும்...”</p> <p>Numbness and sweating in one side of scalp</p> <p>“.....செவியிற் புண்ணாம் தீதுடன் றலைவறண்டு பிடரிநோந் தீரா தன்றே”</p> <p>Ulcer in ear and dryness of scalp</p>

7.3 KABAALA SILETHUMAM

கபால சேற்பனம்

உச்சி யிடிக்கு மயிர்முறியு முறக்கம் பெரிதா முகங்கறுக்கும்
அச்சந் தோன்றுங் கைகால்க ளயரும் வேர்க்கும் விழிசிவக்கும்
பச்சென் றிருக்கு நாசியிற்சீப் பாயு நாளும் புலால்போலக்
கச்சிற் கனத்த முலையாளே கபால சேற்ப மிதுகாணே

- பரராசசேகரம்-சிரரோகம்

As per Pararasasekaram, Kabaala Silethumam is characterised by heaviness of forehead, cough, throbbing head ache, facial glittering, palloriness of eyes, increased body temperature and sweating.

SIMILARITIES	
NETRISOOLAI VATHAM	KABAALA SILETHUMAM
THROBBING HEADACHE	
“....தேறான சிரசினிற் குத்தலுண்டாம்.....” Pain in the head	“....உச்சி யிடிக்கு மயிர்முறியு முறக்கம் பெரிதா....” Throbbing pain in vertex
WEARINESS OF BODY	
“.....குடைந்துமே கையோடு கால்கள் ரண்டும்....” “...ஆறான அங்கமெல்லாங் கடுப்புண்டாகும்...”	அச்சந் தோன்றுங் கைகால்க ளயரும் வேர்க்கும் விழிசிவக்கும் Wearing of limbs

DISSIMILARITIES	
NETRISOOLAI VATHAM	KABAALA SILETHUMAM
“..அமுகுரலாய் நித்திரையு மயக்கமாகும்...” Sleepiness Giddiness/ Fainting	உச்சி யிடிக்கு மயிர்முறியு முறக்கம் பெரிதா முகங்கறுக்கும் Splitting of hair Darkening of face.

7.4 PEENISAM

பீனிசம்

“தலைமிகவலிக்கும் நாசி சளிவிழு மொடுவுண்டாகும்
நலிவுறு தும்மலுண்டாம் நாட்செலில் வறளும் நாசி
மலைவறத் திரண்டு வீழும் வாயுமே நாற்ற முண்டாம்
பெலமுற மூக்கடைக்கும் பீனிச மென்று தேரே”

- நாகமுனிவர் தலைநோய் மருத்துவம்

According to the text Nagamunivar Thalainoi Maruthuvam, the symptoms of Peenisam are given as headache, mucous discharge from nose, recurrent sneezing, dryness of the nose, halitosis and nasal stuffiness.

SIMILARITIES	
NETRISOOLAI VATHAM	PEENISAM
HEADACHE	
“...தேறான சிரசினிற் குத்தலுண்டாம்.....” Pain in the head	“...தலைமிகவலிக்கும்...” Severe headache
NASAL DISORDER	
“...மத்தியத்திற் குடைந்துமே மூக்குத் தண்டு..” Pain in nasal septum	“...பெலமுற மூக்கடைக்கும்...” Nasal stuffiness

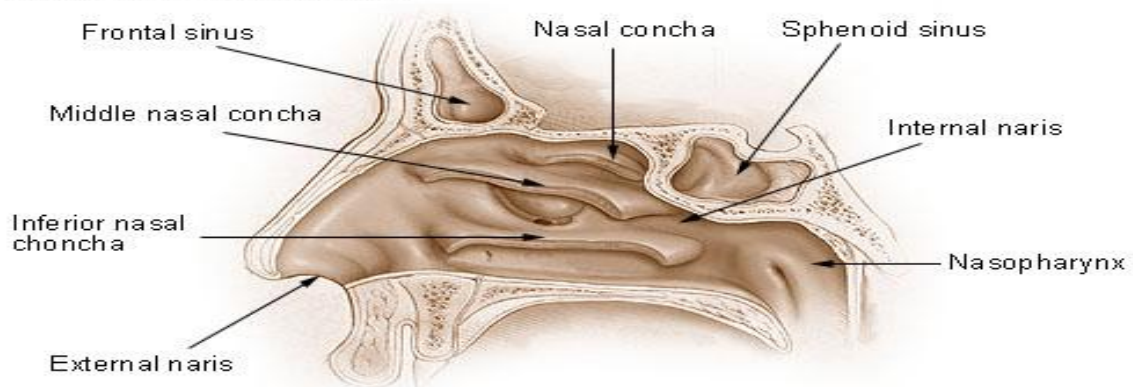
DISSIMILARITIES	
NETRISOOLAI VATHAM	PEENISAM
“.....குடைந்துமே கையோடு கால்கள் ரண்டும்....” “...ஆறான அங்கமெல்லாங் கடுப்புண்டாகும்...” Weariness of body. “..அமுகுரலாய் நித்திரையு மயக்கமாகும்...” Sleepiness Giddiness/ Fainting	“...நலிவுறு தும்மலுண்டாம்...” Recurrent sneezing “...நாட்செலில் வறளும் நாசி...” Dryness of nose in chronic disease(Peenisam) “...வாயுமே நாற்ற முண்டாம்...” Halitosis (bad odour)

8. MODERN ASPECT

A. ANATOMY OF NOSE AND PARANASAL SINUSES

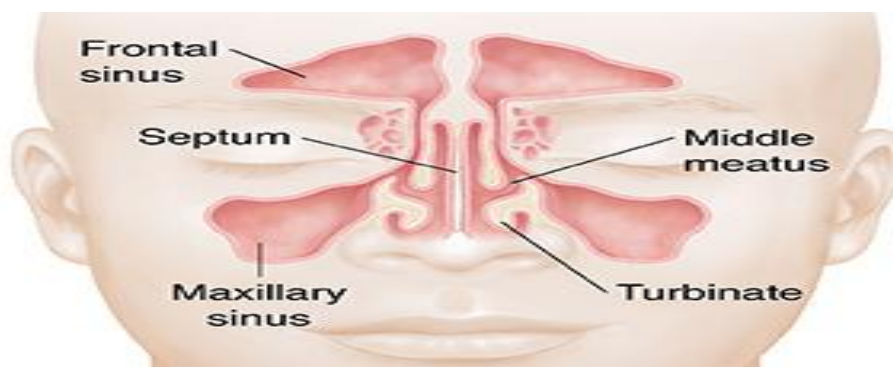
The Nose is an important part of the face, it gives the individual his characteristic appearance. The paranasal sinuses are air-filled spaces located within the bones of the skull and facial bones. They are centered on the nasal cavity and have various functions, including lightening the weight of the head, humidifying and heating inhaled air, increasing the resonance of speech, and serving as a crumple zone to protect vital structures in the event of facial trauma. Four sets of paired sinuses are recognized: maxillary, frontal, sphenoid, and ethmoid.

Nose and Nasal Cavities



Paranasal sinuses

Sinuses are air filled cavities within the bones of the skull. They are 4 pairs of sinuses divided in to anterior and posterior groups. The anterior group contains the frontal sinus, maxillary sinus and anterior ethmoid sinus. The posterior group includes the sphenoid sinus and posterior ethmoid sinus. The anterior group drain in to middle meatus of the nose and posterior ethmoid air cells drain into the superior meatus and the sphenoid sinus drain into the sphenoethmoidal recess.



- Ethmoid sinus cavities which are located between the eyes.
- Frontal sinus cavities which can be found above the eyes (more in the forehead region).
- Maxillary sinus cavities are located on either side of the nostrils (cheekbone areas).
- Sphenoid sinuses that are located behind the eyes and lie in the deeper recesses of the skull.

Maxillary Sinus:

It is pyramidal in shape and lies within the maxilla on each side of the nose. The roof of the sinus is formed by the floor of the orbit and the floor is related to the roots of the second premolar and first molar teeth. Medially it is related to the nose, and posteriorly to the pterygopalatine fossa. The maxillary sinus opens in to the middle meatus.

Frontal Sinus:

The two frontal sinuses are contained within the frontal bone. A bony septum separates the two commonly unequal frontal sinuses. It is related anteriorly to the forehead, posteriorly to the anterior cranial fossa and inferiorly to the nose and orbit. Each sinus opens in to middle meatus.

Sphenoid Sinus:

The two sinuses lie within the body of the Sphenoid, each sinus opens into the sphenoethmoidal recess above the superior turbinate. It is related laterally to the cavernous sinus, optic nerve and internal carotid artery. It is related superiorly to the pituitary gland, and inferiorly to the nasopharynx.

Ethmoid Sinus:

The ethmoid sinuses divided in to anterior and posterior air cells and contained within the ethmoid bone on each side between the orbit laterally and the nose medially. A thin sheet of bone 'lamina papyracea' separates these sinuses from the orbit. Their roof is directly related to the anterior nasal fossa. The anterior ethmoid air cells open in to the middle meatus and the posterior ethmoid air cells open into superior meatus.

Functions of Paranasal sinuses

The presence of sinus cavities within the cranial bone (skull) is essential for the following reasons:

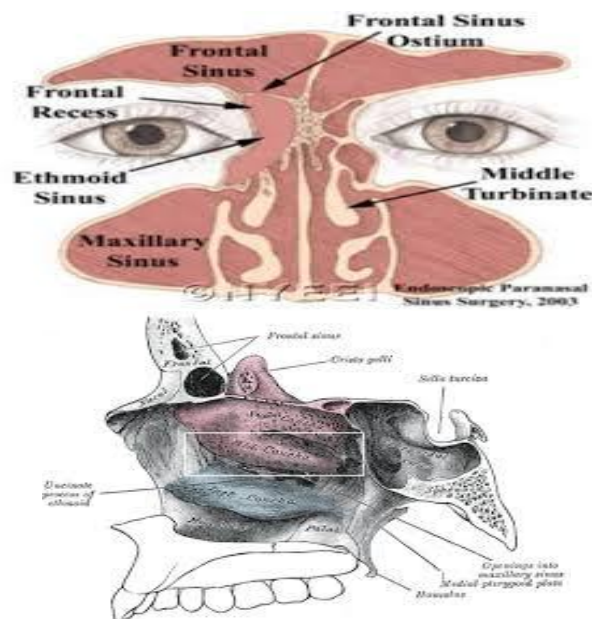
- Sinus cavities allow for voice resonance

- They help filter and add moisture to any air that is inhaled through the nasal passages. On top of filtering and adding moisture to the air we inhale, they also help in the removal of unwanted particles from the sinus cavities.
- Sinus cavities lighten the overall weight of the skull.



Frontal sinus

The **frontal sinuses** are situated behind the brow ridges. Sinuses are mucosa-lined airspaces within the bones of the face and skull. Each opens into the anterior part of the corresponding middle nasal meatus of the nose through the frontonasal duct which traverses the anterior part of the labyrinth of the ethmoid. These structures then open into the hiatus semilunaris in the middle meatus.



Structure

Frontal sinuses are rarely symmetrical and the septum between them frequently deviates to one or other side of the middle line. Their average measurements are as follows: height 28 mm, breadth 24 mm, depth 20 mm, creating a space of 6-7 ml.

Location and Boundaries

The paired frontal sinuses are found within the frontal bone and are the most superior of the paranasal sinuses. They are usually separated by a bony septum and there may be other incomplete septum further dividing them. When viewed anteriorly, they are triangular in shape. The points of this triangle are:

1. The top of the nasion
2. A point 3 cm above the first
3. The junction of the medial third and lateral two-thirds of the supraorbital ridge

The sinus may extend anteriorly within the supraorbital ridge and posteriorly along the orbital part of the frontal bone. The aperture which connects to the nasal cavity usually opens as a frontonasal recess (the middle meatus).

Relations

Medially, with the contralateral frontal sinus. Superiorly, laterally and posteriorly with the frontal bone and frontal lobe. Inferiorly with the orbit.

Macroscopic Features

The sinus is lined by pale pink mucosa.

Microscopic Structure

Respiratory epithelium is a pseudostratified columnar type. Cilia are present near the aperture that connects the sinus with the nasal cavity.

Physiological Variations

The sinuses are fixed within the bone and do not move with physiological functions. They may be different sizes or shapes on each side. Hyperplasia of the sinus epithelium may occur with chronic inflammation. The size and shape of the sinuses vary considerably between different people. This variation is even used to identify bodies in forensic cases if radiological imaging of the sinuses is available. The aperture to the nasal cavity is variable in size and positioning.

Men usually have more prominent sinuses which gives their forehead more obliquity than females and children. The frontal sinuses usually begin to form after birth and are well developed by the age of 8.

Neurovascular Supply

Arterial Supply and Venous Drainage

The mucous membrane in this sinus is innervated by the supraorbital nerve, which carries the postganglionic parasympathetic nerve fibers or mucous secretion from the ophthalmic nerve and supplied by the supraorbital artery and anterior ethmoidal artery.

Lymphatics

Lymph vessels from the frontal sinus pass to submandibular nodes

Nerve Innervation

The sinuses receive general sensory input from branches of the supraorbital nerve (V) and secretomotor input from the pterygopalatine ganglion (via VII).

B. DEVELOPMENT OF SINUSES

The frontal sinuses are absent at birth, but are generally fairly well developed between the seventh and eighth years, only reaching their full size after puberty. The frontal bone is membranous at birth and there is rarely more than a recess until the bone tissue starts to ossify about age two. Consequently, this structure does not show on radiographs before that time. Sinus development begins in the womb, the maxillary and ethmoid sinuses are present at birth. Sphenoidal sinuses are present at birth as well but are very small. Approximately 5% of people have absent frontal sinuses.

C. PHYSIOLOGY OF SINUSES

Through its copious mucus production, the sinus is an essential part of the immune defense/air filtration carried out by the nose. Nasal and sinusal mucosae are ciliated and move mucus to the choanae and finally to the stomach. The thick upper layers of nasal mucus trap bacteria and small particles in tissue abundantly provided with immune cells, antibodies, and antibacterial proteins. The layers beneath are thinner and provide a substrate in which the cilia are able to beat and move the upper layer with its debris through the ostia toward the choanae.

Clinical significance

Infection of the frontal sinus causing sinusitis can give rise to serious complications, as it is in close proximity to the orbit and cranial cavity (orbital cellulitis, epidural and subdural abscess, meningitis).

Endonasal approach into the frontal sinus in children with acute and chronic frontal sinusitis without the usage of surgical optics is not successful, because in this case the operation is performed almost blindly and technically difficult even in adults.

Fractures

Frontal sinus fractures occur from trauma to the part of the frontal bone that overlies the sinus, often from motor vehicle accidents and falls. The hallmarks of a frontal sinus fracture is a frontal depression in the anterior table of the bone. Additionally, clear fluid leaking from the nose may indicate that fractures to the posterior table have torn into the dura mater, creating a cerebrospinal fluid leak.

Goals in management are to protect the intracranial structure, control any existing CSF leakage, prevent late complications, and aesthetically correct the deformity caused, if any. In anterior table fractures, if the table is minimally displaced, there will be no treatment necessary, only observation. If largely displaced, the correction is open reduction and internal fixation. If inhibiting the nasofrontal outflow tract, procedure is to undergo open reduction and internal fixation of the anterior table and osteoplastic flap with obliteration.

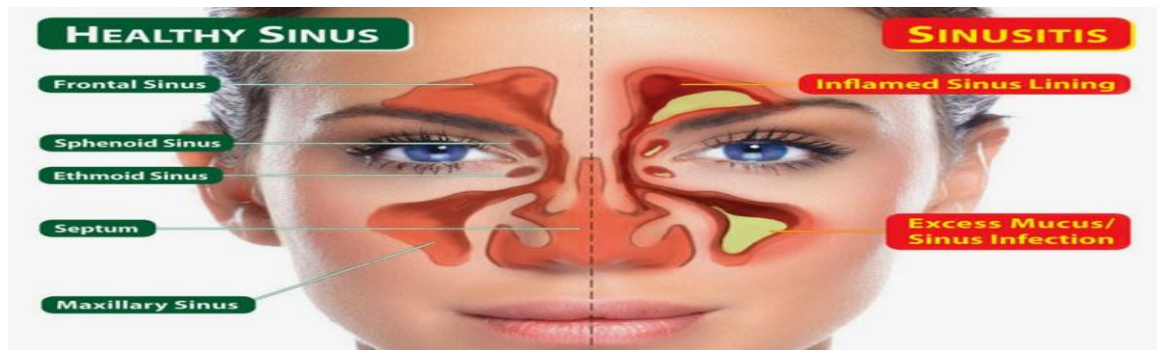
In posterior table fractures, a nondisplaced fracture with no CSF leak will only be observed. Those with a CSF leak will undergo sinus exploration if the CSF leak is not internally resolved within 4 to 7 days. With more dramatic displacements, sinus exploration will be required to determine the required level of cranialization, obliteration, and reparation to the dura.

D. PATHOLOGY OF SINUSES

SINUSITIS

INTRODUCTION

Sinusitis, also known as a **sinus infection** or **rhinosinusitis**, is inflammation of the sinuses resulting in symptoms. Common symptoms include thick nasal mucus, a plugged nose, and pain in the face. Other signs and symptoms may include fever, headaches, poor sense of smell, sore throat, and cough. The cough is often worse at night. Serious complications are rare. It is defined as acuterhinosinusitis (ARS) if it lasts less than 4 weeks, and as chronic rhinosinusitis (CRS) if it lasts for more than 12 weeks.



Sinusitis can be caused by infection, allergies, air pollution, or structural problems in the nose. Most cases are caused by a viral infection. A bacterial infection may be present if symptoms last more than ten days or if a person worsens after starting to improve. Recurrent episodes are more likely in people with asthma, cystic fibrosis, and poor immune function. X-rays are not typically needed unless complications are suspected. In chronic cases confirmatory testing is recommended by either direct visualization or computed tomography.

CLASSIFICATION

Sinusitis is defined as an inflammation of the mucous membrane that lines the paranasal sinuses and is classified chronologically into several categories:

- Acute sinusitis – A new infection that may last up to four weeks and can be subdivided symptomatically into severe and non-severe.
- Recurrent acute sinusitis – Four or more full episodes of acute sinusitis that occur within one year
- Subacute sinusitis – An infection that lasts between four and 12 weeks, and represents a transition between acute and chronic infection
- Chronic sinusitis – When the signs and symptoms last for more than 12 weeks.
- Acute exacerbation of chronic sinusitis – When the signs and symptoms of chronic sinusitis exacerbate, but return to baseline after treatment

By location

There are several paired paranasal sinuses, including the frontal, ethmoidal, maxillary and sphenoidal sinuses. The ethmoidal sinuses are further subdivided into anterior and posterior ethmoid sinuses, the division of which is defined as the basal lamella of the middle turbinate. In addition to the severity of disease, discussed below, sinusitis can be classified by the sinus cavity which it affects:

- Maxillary – can cause pain or pressure in the maxillary (cheek) area (*e.g.*, toothache, or headache)
- Frontal – can cause pain or pressure in the frontal sinus cavity (located above eyes), headache, particularly in the forehead.
- Ethmoidal – can cause pain or pressure between/behind the eyes, the sides of the upper part of the nose (the medial canthi), and headaches.
- Sphenoidal – can cause pain or pressure behind the eyes, but often refers to the skull vertex (top of the head), over the mastoid processes, or the back of the head.

CAUSES

Acute

- Acute sinusitis is usually precipitated by an earlier upper respiratory tract infection, generally of viral origin, mostly caused by rhinoviruses, coronaviruses, and influenza viruses, others caused by adenoviruses, human parainfluenza viruses, human respiratory syncytial virus, enteroviruses other than rhinoviruses, and metapneumovirus.
- If the infection is of bacterial origin, the most common three causative agents are *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis*. Until recently, *Haemophilus influenzae* was the most common bacterial agent to cause sinus infections. However, introduction of the H. influenza type B (Hib) vaccine has dramatically decreased H. influenza type B infections and now non-typable H. influenza (NTHI) are predominantly seen in clinics. Other sinusitis-causing bacterial pathogens include *Staphylococcus aureus* and other streptococci species, anaerobic bacteria and, less commonly, gram negative bacteria.
- Viral sinusitis typically lasts for 7 to 10 days, whereas bacterial sinusitis is more persistent. Approximately 0.5% to 2% of viral sinusitis results in subsequent bacterial sinusitis. It is thought that nasal irritation from nose blowing leads to the secondary bacterial infection.
- Acute episodes of sinusitis can also result from fungal invasion. These infections are typically seen in patients with diabetes or other immune deficiencies (such as AIDS or transplant patients on immunosuppressive anti-rejection medications) and can be life-threatening. In type I diabetics, ketoacidosis can be associated with sinusitis due to mucormycosis.

- Chemical irritation can also trigger sinusitis, commonly from cigarette smoke and chlorine fumes. Rarely, it may be caused by a tooth infection.

Chronic

- By definition chronic sinusitis lasts longer than 12 weeks and can be caused by many different diseases that share chronic inflammation of the sinuses as a common symptom.
- Symptoms of chronic sinusitis may include any combination of the following: nasal congestion, facial pain, headache, night-time coughing, an increase in previously minor or controlled asthma symptoms, general malaise, thick green or yellow discharge, feeling of facial 'fullness' or 'tightness' that may worsen when bending over, dizziness, aching teeth, and/or bad breath. Often chronic sinusitis can lead to anosmia. In a small number of cases, acute or chronic maxillary sinusitis is associated with a dental infection.
- Chronic sinusitis cases are subdivided into cases with polyps and cases without polyps. When polyps are present, the condition is called chronic hyperplastic sinusitis; however, the causes are poorly understood and may include allergy, environmental factors such as dust or pollution, bacterial infection, or fungus (either allergic, infective, or reactive).
- Chronic sinusitis represents a multifactorial inflammatory disorder, rather than simply a persistent bacterial infection. The medical management of chronic sinusitis is now focused upon controlling the inflammation that predisposes patients to obstruction, reducing the incidence of infections. However, all forms of chronic sinusitis are associated with impaired sinus drainage and secondary bacterial infections.
- A combination of anaerobic and aerobic bacteria are detected in conjunction with chronic sinusitis. Also isolated are *Staphylococcus aureus* (including methicillin resistant *S.aureus*) and coagulase-negative *Staphylococci* and Gram negative enteric organisms can be isolated.
- Attempts have been made to provide a more consistent nomenclature for subtypes of chronic sinusitis. The presence of eosinophils in the mucous lining of the nose and paranasal sinuses has been demonstrated for many patients, and this has been termed eosinophilic mucin rhinosinusitis (EMRS). Cases of EMRS may be related to an allergic response, but allergy is not often documented, resulting in further subcategorization into allergic and non-allergic EMRS.

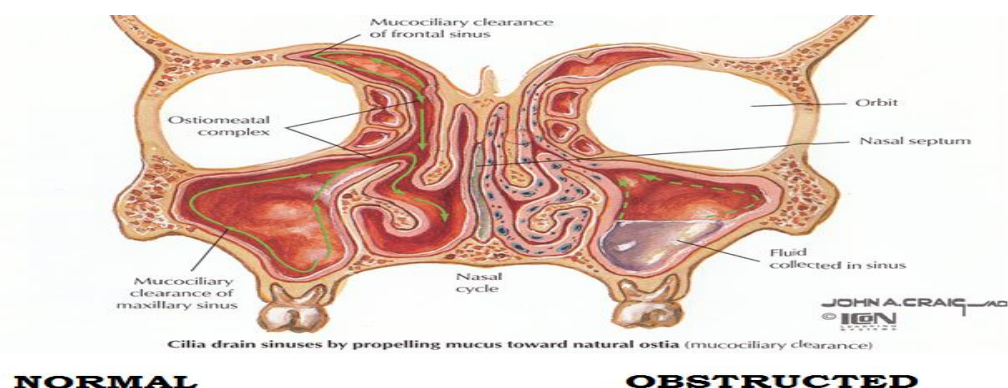
- A more recent, and still debated, development in chronic sinusitis is the role that fungi play in this disease. It remains unclear if fungi are a definite factor in the development of chronic sinusitis and if they are, what the difference may be between those who develop the disease and those who remain free of symptoms. Trials of antifungal treatments have had mixed results.
- Recent theories of sinusitis indicate that it often occurs as part of a spectrum of diseases that affect the respiratory tract (*i.e.*, the "one airway" theory) and is often linked to asthma. All forms of sinusitis may either result in, or be a part of, a generalized inflammation of the airway, so other airway symptoms, such as cough, may be associated with it. Both smoking and second hand smoke are associated with chronic sinusitis.

PATHOPHYSIOLOGY OF SINUSITIS

The mucosa of sinus shows chronic inflammatory changes. The cilia gets damaged by the infection with resultant inadequate drainage of sinus cavity, particularly the maxillary sinus where the ostium is situated high up in the medial wall. The retained secretions thereby leads to reinfection.

Periphlebitis and perilymphangitis may occur leading to oedema and polyp formation, the so called hypertrophic or polypoidal sinusitis. Sometimes there occurs metaplasia of ciliated columnar epithelium to the stratified squamous type with interspersed papillary hyperplastic epithelial and inflammatory cells producing a picture of papillary hypertrophic sinusitis.

Occasionally the chronic inflammatory process may induce atrophic changes in the sinus mucosa with increase in submucosal fibrous tissue (Atrophic Sinusitis)



SIGNS AND SYMPTOMS

- Headache / facial pain or pressure of a dull, constant, or aching sort over the affected sinuses is common with both acute and chronic stages of sinusitis. This pain is typically localized to the involved sinus and may worsen when the affected person bends over or when lying down. Pain often starts on one side of the head and progresses to both sides.
- Acute sinusitis may be accompanied by thick nasal discharge that is usually green in colour and may contain pus (purulent) and/or blood.
- Often a localized headache or toothache is present, and it is these symptoms that distinguish a sinus-related headache from other types of headaches, such as tension and migraine headaches. Another way to distinguish between toothache and sinusitis is that the pain in sinusitis is usually worsened by tilting the head forwards and with valsalva maneuvers.
- Infection of the eye socket is possible, which may result in the loss of sight and is accompanied by fever and severe illness. Another possible complication is the infection of the bones (osteomyelitis) of the forehead and other facial bones – Pott's puffy tumor. Sinus infections can also cause middle ear problems due to the congestion of the nasal passages. This can be demonstrated by dizziness, "a pressurized or heavy head", or vibrating sensations in the head. Post-nasal drip is also a symptom of chronic sinusitis.
- Halitosis (bad breath) is often stated to be a symptom of chronic rhinosinusitis; however, gold standard breath analysis techniques have not been applied. Theoretically, there are several possible mechanisms of both objective and subjective halitosis that may be involved.

COMPLICATIONS

- The proximity of the brain to the sinuses makes the most dangerous complication of sinusitis, particularly involving the frontal and sphenoid sinuses, infection of the brain by the invasion of anaerobic bacteria through the bones or blood vessels. Abscesses, meningitis and other life-threatening conditions may result. In extreme cases the patient may experience mild personality changes, headache, altered consciousness, visual problems, seizures, coma and possibly death.
- Sinus infection can spread through anastomosing veins or by direct extension to close structures.

- Orbital complications were categorized by Chandler et al. into five stages according to their severity.

Stage	Description
I	Preseptal cellulitis
II	Orbital cellulitis
III	Subperiosteal abscess
IV	Orbital abscess
V	Cavernous sinus septic thrombosis

- Contiguous spread to the orbit may result in periorbital cellulitis, subperiosteal abscess, orbital cellulitis, and abscess.
- Orbital cellulitis can complicate acute ethmoiditis if anterior and posterior ethmoidal veins thrombophlebitis enables the spread of the infection to the lateral or orbital side of the ethmoid labyrinth.
- Sinusitis may extend to the central nervous system, where it may cause cavernous sinus thrombosis, retrograde meningitis, and epidural, subdural, and brain abscesses.
- Orbital symptoms frequently precede intracranial spread of the infection .
- Other complications include sinobronchitis, maxillary osteomyelitis, and frontal bone osteomyelitis.
- Osteomyelitis of the frontal bone often originates from a spreading thrombophlebitis.
- A periostitis of the frontal sinus causes an osteitis and a periostitis of the outer membrane, which produces a tender, puffy swelling of the forehead.

DIAGNOSIS

Acute

- Health care providers distinguish bacterial and viral sinusitis by watchful waiting.
- If a person has had sinusitis for fewer than 10 days without the symptoms becoming worse, then the infection is presumed to be viral.
- When symptoms last more than 10 days or get worse in that time, then the infection is considered bacterial sinusitis.

- Imaging by either X-ray, CT or MRI is generally not recommended unless complications develop.
- Pain caused by sinusitis is sometimes confused for pain caused by pulpitis (toothache) of the maxillary teeth, and vice versa.
- Classically, the increased pain when tilting the head forwards separates sinusitis from pulpitis.

Chronic

- For sinusitis lasting more than 12 weeks a CT scan is recommended.
- On a CT scan, acute sinus secretions have a radiodensity of 10 to 25 Hounsfield units (HU), but in a more chronic state they become thickened, with a radiodensity of 30 to 60 HU.
- Nasal endoscopy and clinical symptoms are also used to make a positive diagnosis.
- A tissue sample for histology and cultures can also be collected and tested.
- Allergic fungal sinusitis (AFS) is often seen in people with asthma and nasal polyps.
- In rare cases, sinusoscopy may be made.
- Nasal endoscopy involves inserting a flexible fiber-optic tube with a light and camera at its tip into the nose to examine the nasal passages and sinuses.
- This is generally a completely painless (although uncomfortable) procedure which takes between five and ten minutes to complete.

FRONTAL SINUSITIS

Excess mucus production or inflammation of the frontal sinuses can prevent this mucus from draining properly, resulting in a condition called acute frontal sinusitis.

Causes of Frontal Sinusitis

The main cause of acute frontal sinusitis is mucus buildup due to sinus inflammation. Several factors may influence the amount of mucus being produced and your frontal sinus' ability to drain the mucus:

Viruses

The common cold virus is the most frequent cause of acute frontal sinusitis. When you have a cold or flu virus, it increases the amount of mucus your sinuses produce. That makes them more likely to clog and become inflamed.

Bacteria

Your sinonasal cavity is filled with tiny hairs called cilia that help block organisms from entering the sinuses. These cilia aren't 100 percent effective. Bacteria can still enter your nose and travel to the sinus cavities. A bacterial infection in the sinuses will often follow a viral infection, since it's easier for bacteria to grow in the mucus-rich environment caused by a viral infection such as the common cold. Bacterial infections usually cause the most severe symptoms of acute sinusitis.

Nasal polyps

Polyps are abnormal growths in your body. Polyps in the frontal sinuses may block the sinuses from filtering air and increase the amount of mucus build up.

Deviated nasal septum

People who have a deviated nasal septum can't breathe equally through both sides of their nose. A lack of proper air circulation can cause inflammation if the tissues of the frontal sinuses become compromised.

Risk Factors

Risk factors for acute frontal sinusitis include:

- frequent colds
- allergic reactions
- smoking tobacco products
- enlarged adenoids (tonsils)
- weak immune system
- fungal infections
- structural differences in the sinus cavities that impact drainage ability

Symptoms of Acute Frontal Sinusitis

- Facial pain around eyes or forehead is the most common symptom of acute frontal sinusitis. Other symptoms may vary in severity depending on the type of inflammation or infection. They include:
 - nasal discharge
 - feeling of pressure behind the eyes
 - inability to smell
 - cough that gets worse during the night
 - feeling unwell (malaise)
 - a mild or high fever

- tiredness
- sore throat
- unpleasant or sour breath

Children may have all of the above symptoms, as well as the following:

- a cold that worsens
- discharge that is unusual in colour
- high fever
- By palpation on frontal sinuses to assess pain and tenderness.

Diagnosis of Acute Frontal Sinusitis

- check nasal cavity for signs of polyps and inflammation.
- Mucus culture
- Nasal endoscopy
- CT scan or MRI
- Allergy tests
- Blood tests for other possible causes of sinusitis.

GENERAL TREATMENT APPROACHES

Prevention

The best way to prevent sinusitis is to avoid colds and influenza. If you are unable to avoid them, the next best way to prevent sinusitis is to effectively treat colds and influenza.

Preventing acute frontal sinusitis

You can help prevent problems in your sinuses by practicing good hygiene to avoid infection. You should wash your hands before eating and after using the bathroom. Make sure to wash your hands before touching your face. Avoiding allergens such as tobacco smoke can also prevent infection and mucus build up.

Drink plenty of water and eat healthy foods to keep your immune system strong and functioning properly. Staying hydrated can also help with mucus drainage.

Treatment

- Your treatment depends on whether your sinusitis is caused by bacteria, polyps, or some other factor.
- Since most cases of acute frontal sinusitis are caused by a viral infection, physician may take a nasal spray or decongestant to decrease inflammation, assist with mucus drainage, and relieve pressure in the frontal sinuses.

- Patient may also be advised to take an over-the-counter pain reliever to treat the symptoms caused by acute frontal sinusitis.
- However, children shouldn't be given aspirin. It can cause a deadly condition known as Reye's syndrome.
- Antihistamines are also frequently used given their drying effects, but overuse can also lead to discomfort.
- If the symptoms don't improve within seven to 10 days, the cause of your sinusitis may be bacterial. In that case antibiotics may be helpful.
- Surgery can be used to repair a deviated septum causing acute frontal sinusitis.
- Most acute sinusitis symptoms begin to disappear within a few days of treatment. If symptoms persist for 12 weeks or longer, it's known as chronic frontal sinusitis. Chronic sinusitis can be more difficult to treat with medicine and often requires surgery to improve sinus drainage.

Hydration

Home remedies that open and hydrate sinuses may, indeed, be only treatment necessary for mild sinusitis that is not accompanied by signs of acute infection. Drinking plenty of fluids and getting lots of rest when needed is still the best bit of advice to ease the discomforts of the common cold. Water is the best fluid and helps lubricate the mucus membranes. Spicy foods that contain hot peppers or horseradish may help clear sinuses. Inhaling steam 2 - 4 times a day is extremely helpful, costs nothing, and requires no expensive equipment. The patient should sit comfortably and lean over a bowl of boiling hot water (no one should ever inhale steam from water as it boils) while covering the head and the bowl with a towel so the steam remains under the cloth. The steam should be inhaled continuously for 10 minutes. A mentholated or other aromatic preparation may be added to the water. Long, steamy showers, vaporizers, and facial saunas are alternatives.

9. LINE OF TREATMENT AND DIET AND REGIMENS

Line of Treatment

“வைத்தியச் செயல் வைத்தியமாமே
பலவாறு மாறுதலடைந்து கெடுக்கின்ற உடலை நிலைக்கும்
மாறுதல் அணுகாணும் ஒரே தன்மையாக
செய்தும் அதனாலாஞ் செயிலக்குறைவின்றி
நடக்கச் செய்வது தெதுவோ அதுவே வைத்தியம்”

-திருமூலர் 800

So the Siddha treatment is not only for removal of disease, but for the prevention and improving the body condition. This is said as follows.

1. Kaappu (Prevention)
2. Neekkam (Treatment)
3. Niraivu (Restoration)

Siddha system has unequivocally stated that even during the time of conception, some defects creep into the fertilized embryo. The defects form the basis for the manifestation of certain constitutional diseases later on during the existence of the individual. The disease for which no known cause is given are designated as diseases of idiopathic origin or hereditary disorders. In Siddha system such diseases are described as Karma noikal.

1. Kaappu (Prevention)

பிணியணுகா விதி

"திண்ண மிரண்டுள்ளே சிக்க வடக்காமற்
பெண்ணின்பா லொன்றைப் பெருக்காமல் - உண்ணுங்கால்
நீர்சுருக்கி மோர்பெருக்கி நெய்யுருக்கி யுண்பவர் தம்
பேருரைக்கிற் போமே பிணி"

-பதார்த்த குண சிந்தாமணி

In siddha system of medicine there are many ways to prevent disease by changing lifestyle. It is well explained in Theraiyar pinianuga vidhi.

2. Neekkam (Treatment)

The Three UyirThathus which are responsible for organization, regularization and integration of the bodily structures and their physiological functions are always kept in a state of equilibrium by word, thought, deed and food of the individual.

The general aetiological factors for constitutional discomfort is said to be incompatible diet, mental and physical activities.

When treating for removal of the diseases, the following principles must be noted.

“நோய்நாடி நோய்முதல் நாடி அது தணிக்கும்
வாய்நாடி வாய்ப்பச் செயல்”

– திருக்குறள்

So it is essential to know the disease and the cause for the onset of the disease, before treating the patient so also to the nature of the patient, the severity of illness, the season and time of the occurrence of the diseases must be observed.

Clinical Management for Disease Condition

- Normalization of altered uyirthathukal
- Internal medicines
- Asanas
- Diet

Normalization of Altered Uyirthathukal

1. ENNAIKULIYAL(OIL BATH)

கபத்தின் இருப்பிடத்தில் (head) வாதத்தின் சேர்க்கை உண்டாகிறது. வாதம், கபம் இரண்டுமே குளிர்ச்சி எனும் பொதுக் குணம் (common gunas) உள்ளது. அதனால் உஷ்ண, வீரியமான மருந்துகளையே இந்நிலையில் தேர்ந்தெடுக்க வேண்டும். முகத்தில் கப வாத சேர்க்கை இருப்பதினால், இரண்டாவது நிலையில் நசியம் இன்றியமையாததாகும். அது உஷ்ண தன்மை உடையதாக இருக்க வேண்டும் (சுக்கு தைலம்). தலைக்கு எண்ணெய் தேய்த்து குளிப்பதை தவிர்க்க வேண்டும். கப தானம் என்பதால் எண்ணெய் சிகிச்சை மேற்கொள்வதை விட வறண்ட சிகிச்சையே சிறந்தது.

2. KAZHICHALMARUTHUVAM (PURGATION)

“விசேசனதால் வாதம் தாழும்”

2.1 INTERNAL MEDICINES

Noikkanachooranam, chendooram, kudineer, leghyam.

- மாவிலிங்கம், சிற்றரத்தை, சிறுதேக்கு, சுக்கு, தேவதாரு.
- அழுக்கிரா சூரணம், திப்பிலி சூரணம், சீந்தில் சூரணம்
- சண்ட மாருத செந்தூரம், நரசிம்ம லேகியம், பூண்டு லேகியம்

3. Niraivu (Restoration)

Patients need good discussion and motivation and persuasion to accept the eventuality of Vatha disease and prepare for a lifestyle that provides optimization of metabolic status. In suitable effective medicinal preparations have to be administered in the beginning itself to neutralize and eliminate this disease.

Siddhars aimed at bringing the three doshas in equilibrium in the treatment of disease. Towards this end we treat with herbs and mineral preparations are used, while treating the Vatham level in the body. Siddhars prescribed a minimum dosage initially and then increased the dose gradually. There are thousand preparations for Vatham and for its complications found in various Siddha text books Kudineer, Chooranams, Ilahams, Parpam and Senduram. Siddha system lays a great importance on the observation of rules regarding diet in everyday life because the Siddha system has rightly realized, that the basic factor of the body is food. That is Annamayakosam is the first among the five kosams constituting our physical and mental existence. To prevent the occurrence of the disease, elaborate inference regarding food item in our daily diet is given in the textbook of Siddha,

“மாறுபாடில்லாத வுண்டி மறுத்துண்ணின்
ஊறுபாடி ல்லையு யிர்க்கு”

—திருக்குறள்

Generally when a medicine is administered Siddha physician prescribes diet regimen according to the nature of the medicine and severity of the disease. As over intake or consuming unbalanced and incompatible diet is considered to be the prime causative factor for upsetting the Thirithosha balance leading to the manifestations of various ailments. Regarding diet regimen in Vatham there is special instructions found in Pathartha gunasinthamani and other books.

DIET AND RESTRICTION

Patient advised to take,

- ✓ Plenty of fruit and vegetables.
- ✓ Plenty of antioxidant food items. Examples include pineapple, pepper, Horse raddish and garlic.

Antioxidants

Oxidation damage can contribute to chronic sinusitis. Antioxidants protect the mucus membranes from free radical damage.

✓ **Pineapple**

Pineapple is rich in antioxidants which protect the delicate mucus membranes from damage. The enzymes in pineapple also break down the junk that builds up in sinuses and reduce inflammation.

✓ **Peppers**

Everyone knows that hot peppers can clear sinuses. Capsaicin, the compound in chili peppers that gives them their heat, eases pain, reduces inflammation, and increases mucus production. Just use it wisely and in moderation.

✓ **Horseradish**

This spicy root acts much the same way as chili peppers, reducing inflammation and increasing mucus production. It also has antibiotic properties.

✓ **Garlic**

Garlic and its relative, the onion, stimulate many of the same pathways as peppers to reduce inflammation and pain. Allicin, a sulfur compound created when garlic is crushed or cut, is antibacterial, antifungal, and even kills some viruses too.

• **Probiotics**

The friendly bacteria in our bodies help keep less helpful bacteria and fungi infections at bay. Fermented foods contain probiotics. Vegan options include sauerkraut, kimchi, pickles, coconut yogurt, tempeh, miso, and kombucha.

• **Patient were advised to avoid Dairy products**

As dairy can thicken mucus and promote microbial growth

Exercise

Exercise improves circulation, moves lymph fluid, aids the immune system, and increases mucus production. Rebounding, jump rope, and jumping jacks use gravity to help clear sinuses, but any movement is better than nothing.

Steam

Inhaling steam can loosen mucus, break up buildups, and gently clear sinuses. You can use a bowl of hot water, steam machines, or even a hot shower to hydrate away some of the pain.

Essential Oils

Many essential oils can stimulate mucus membranes and reduce congestion. A few drops in hot water can improve the effectiveness of steam inhalation.

Use them in a hot bath or shower too. Eucalyptus, rosemary, peppermint, tea tree oil, lemon, thyme, and pine are some of the best ones for your sinuses.

Neti Pots

Neti pots help hydrate and clean out sinus cavities while stimulating the production of more mucus. Make sure you use clean, distilled water and keep your neti pot clean and disinfected between uses.

Oil Pulling

Oil pulling, especially with coconut oil, is a great way to kill bacteria in your mouth and throat while reducing inflammation in your sinuses. Simply swish around a spoonful of it for five to ten minutes and spit it out.

Saline Nasal Spray

A simple saline solution is often enough to break up thick mucus and get sinuses clear, open, and moving again.

Warm Compress

A warm towel can be placed over the face to increase circulation to the sinuses and gently loosen mucus.

Stress Relief

Stress promotes sinus problems by creating oxidative compounds and limiting many of the body's regular functions. Find ways to alleviate and release stress from your life. Use meditation, breathing exercises, yoga, massage, and mind over body techniques to increase the natural healing properties within yourself.

1. Gomukhasana
2. Janu Sirsasana
3. Bhujangasana
4. Ustrasana
5. Setu Bandha Sarvangasana
6. Adho Mukha Svanasana
7. Salamba Sarvangasana

Yoga Poses for Sinusitis

Sl. No.	Yoga Poses for Sinus	Benefits Of The Pose for Sinusitis
1	Gomukhasana (Cow Face Pose)	Reduces stress and anxiety. It stretches the chest muscles aiding flexibility in the air passage region. The pose boosts in relaxation when worried or tired.
2	Janu Sirsasana (Head To Knee Pose)	It calms mind and gives a good stretch to shoulders. The pose relieves headaches, fatigue, and anxiety. The asana cures insomnia and high blood pressure which can make your sinusitis condition worse.
3	Bhujangasana (Cobra Pose)	The Cobra Pose gives the lungs a good stretch. It works great as a stress release mechanism. This is one of the best yoga poses for sinus relief as it opens up your lungs and makes breathing easier.
4	Ustrasana (Camel pose)	Ustrasana is great for the overall health and well-being. It improves respiration and stretches the throat and chest. The pose stretches and opens up entire frontal region.
5	Setu Bandhasana (Bridge Pose)	Setu Bandhasana helps relieve stress in the back. It stretches neck and chest. The asana helps in reducing depression and anxiety which can trigger off sinus.
6	Adho Mukha Svanasana (Downward-Facing Pose)	The pose improves the blood circulation in the body easing out any knots and stress crumpled up in the body. It stretches neck and spine releasing pressure in those areas.
7	Salamba Sarvangasana (All Limbs Pose)	The pose cures mild depression and calms the brain. It gives neck a good stretch and keeps insomnia and fatigue at bay.

Table 14 - Yoga Poses for Sinusitis

Ustrasana



Adho Mukha Svanasana



Setu Bandhasana



Salamba Sarvangasana



Bhujangasana



10. MATERIALS AND METHODS

1. STUDY TYPE

- Observational type of study

2. STUDY DESIGN

- Open label analytical study

3. STUDY PLACE

- Out Patient Department National Institute of Siddha, Chennai-47.

4. SAMPLE SIZE

Patients - 30

5. SELECTION CRITERIA

5.1. INCLUSION CRITERIA

- Age 15-70 years
- Pain in between the eyebrows
- Pain in forehead
- Pain in nose
- Throat pain
- Weariness of the body/Body pain
- Sleepiness, Giddiness/fatigue
- Head ache

Patients who fulfill five or more criterias will be included in the study.

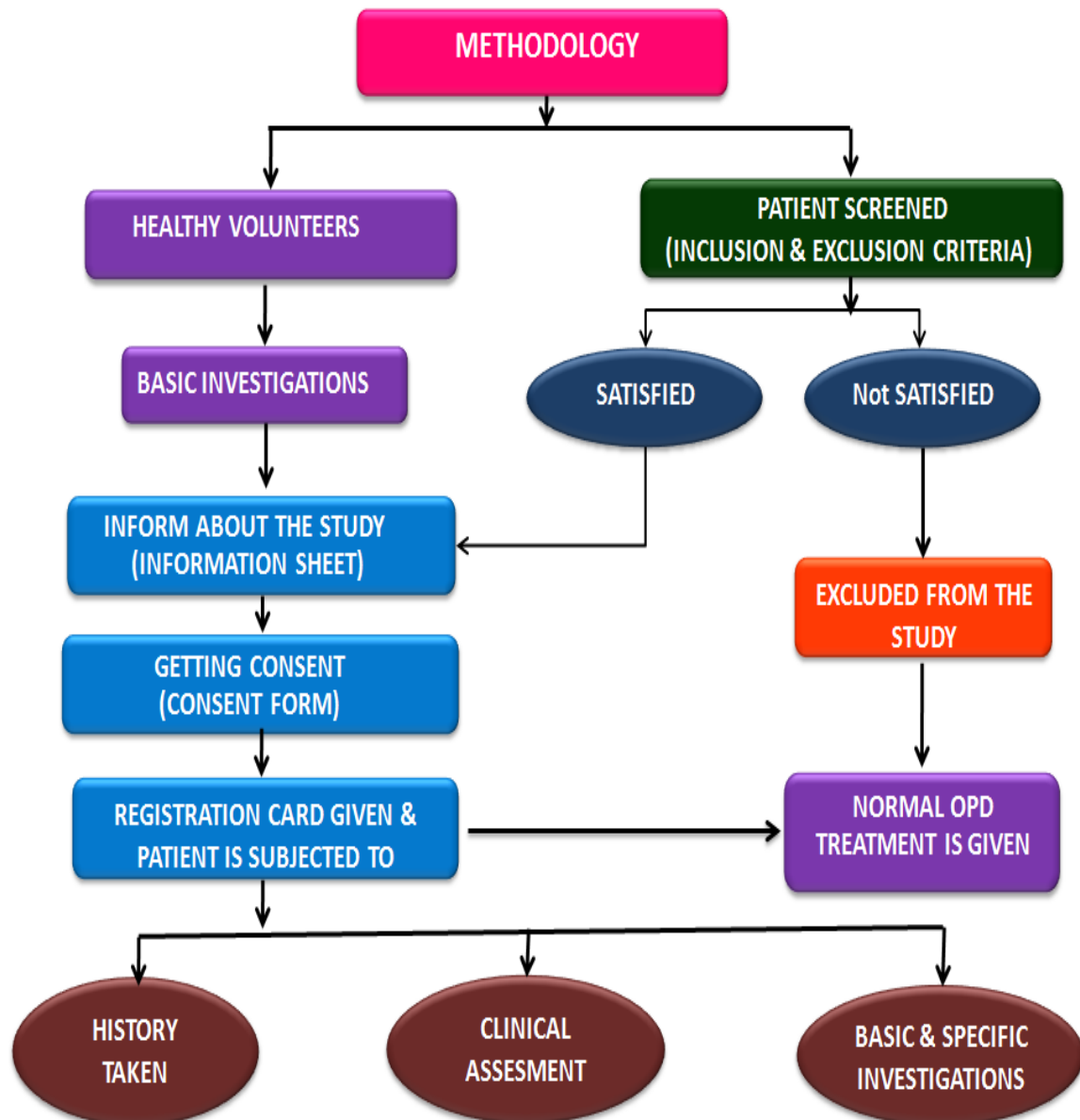
5.2. EXCLUSION CRITERIA

- Sooriyaavartham (migraine)(one side head ache,photophobia,phonophobia)
- Chandhiraavartham (Cluster head ache) (one side pain, excessive lacrymation, redness in the affected eye)
- Other major illness
- Vulnerable group

5.3. WITHDRAWAL CRITERIA

- Those lost in follow up
- Those who are not willing for investigation

6. METHODOLOGY



7. INVESTIGATIONS

A. SIDDHA PARAMETERS

1. Eight fold examination

a.Naadi

- Naadi nithanam
- Naadi nadai

b.Meikuri (Physical Signs)

- Veppam
- Viyarvai
- Thodu Vali

c. Naa (Tongue)

- Maa padithal
- Niram,
- Suvai
- Vaineer Ooral
- Vedippu

d.Niram (Complexion)

- Karuppu
- Manjal
- Veluppu

e.Mozhi (Voice)

- Sama oli
- Urattha oli
- Thazhntha oli

f.Vizhi (Eyes)

- Niram
- Kanneer Vadithal
- Erichal
- Peelai Seruthal

g.Malam (Stools)

- Niram
- Sikkal
- Sirutthal
- Kalichal
- Seetham

h.Moothiram (Urine)**1. a. Neerkuri**

- Niram
- Manam
- Edai
- Alavu
- Nurai
- Enjal

1. b. Neikuri**2. Manikkadai nool****3. Yakkai elakkanam****B.MODERN PARAMETERS****BLOOD****Haemogram**

- TC
- DC
- ESR
- Hb
- FBS
- PPBS
- S. Cholesterol
- AEC(Absolute Eosinophil Count)

Biochemistry

- SGOT
SGPT
- Lipid Profile
- Urea
- Creatinine

Urine

- Albumin
- Sugar
- Deposits

Specific investigations:

- Radiological investigation
X ray –Paranasal sinuses
- Absolute Eosinophil Count

8. DATA COLLECTION

Case Record Form

I : Screening and selection proforma

II : History proforma

III : Clinical Assessment Form

IV : Laboratory Investigations

V : Informed Written Consent Form

VI : Patient Information Sheet

9. DATA MANAGEMENT

- After enrolling the patient in the study, a separate file for each patient was opened and all forms were filled in the file. Study No. and Patient No. were entered on the top of file for easy identification.
- The screening forms were filed separately.
- The Data recordings were monitored for completion and compliance of patients by HOD and Sr. Research Officer (Statistics). All forms were further scrutinized in presence of Investigators by Sr. Research Officer (Statistics) for logical errors and incompleteness of data before entering on to computer to avoid any bias. No modification in the results was permitted for unbiased report.
- Any missed data found in during the study, it was collected from the patient.

- All collected data were entered using MS access software onto computer.
- Investigators were trained to enter the patient data and cross checked by SRO

10. STATISTICAL ANALYSIS

All collected data were entered in to computer and the neikuri shape were recorded as per literature. The chi-square, Mantel-Hanzel chi-square, Proportion test were used to determine the significance of a variable. Multivariate analysis – Factor analysis were also performed to determine the factors associated with neikuri shapes. Probability less than 0.05 were taken as significance.

11. OUTCOME

Primary outcome :

Establishing the relevance / correlation of ‘Yugi Vaidya Chinthamani - 800’ symptomatology with that of modern concepts of Frontal Sinusitis and its complications.












Secondary outcome :

1. Ariving at Siddha pathophysiology of Netrisoolai Vatham.
2. Finding the line of treatment and dietary regimen forNetrisoolai Vatham.
3. Elucidation of Siddha investigatory parameters of envagaithervu is the diagnosis of disease Netrisoolai Vatham.

12. ETHICAL ISSUES

- Patients were examined and screened unbiased manner and were subjected to the criteria.
- Informed consent were obtained from the patient in writing, explaining in the understandable language to the patient.
- The data collected from the patient were kept confidentially. The patient were explained about the diagnosis.
- To prevent any infection, while collecting blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of lab equipments were used.
- This study involves only the necessary investigations (mentioned in the protocol) and No other investigation were done.
- Normal treatment procedure followed in NIS were prescribed to the study patients and the treatment were provided at free of cost.
- There were no infringement on the rights of patient.

13. GANNT CHART

S. n o	Description of Task	Months													
		1 - 3	4 - 6	7	8	9	10	11	12	13 - 22	13 - 23	24 - 25	26 - 27	28 - 30	31- 32
1	Topic selection														
2	Collection of literature														
3	Appearing for Screening														
4	Preparation of Protocol														
5	Approval from IEC														
6	Selection of Cases														
7	Data entry														
8	Preconsolidation														
9	Analysis & interpretation														
10	Discussion & revision														
11	Submission														

11. OBSERVATION AND RESULTS

11.1 AGE DISTRIBUTION

AGE DISTRIBUTION		
Age distribution	No. of cases	Percentage %
15 - 30 years	13	43.4
31 - 45 years	10	33.3
46 - 60 years	7	23.3

Table 16 - Age distribution

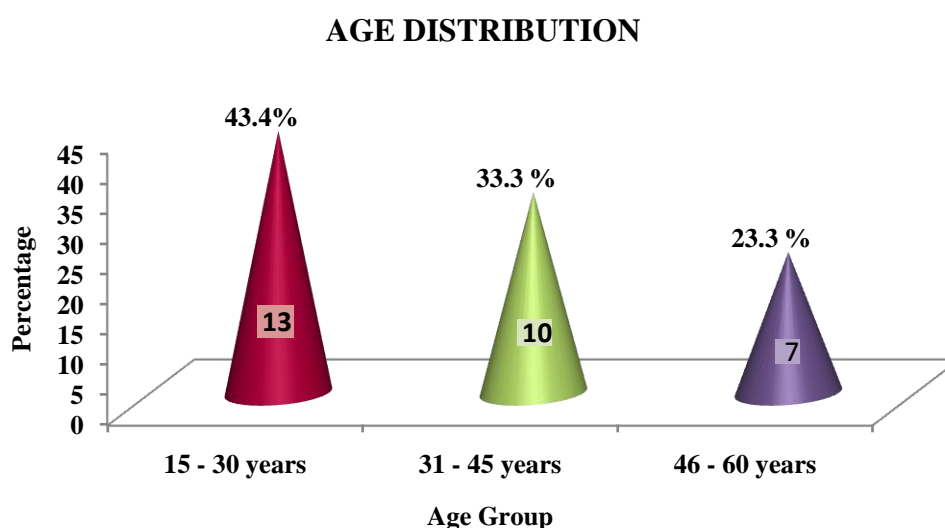


Figure 1 - Age distribution

Observation

Among 30 cases 13 (43.4%) cases were in the age group of 15-30 yrs, 10 (33.3%) cases were between the age group of 31-45yrs, 7 (23.3%) cases were between the age group of 46-60 yrs.

Inference

Since the inclusion criteria comprises of 15 to 70 years, the majority of patients naturally fell under 15 to 30 year age group, the 15 to 30 year age group is normally the socially active age group having more chances for exposure to the exterior environment. It may be because of increase in environmental pollution and change in life style and also food habits which are hazardous to health.

11.2. SEX DETERMINATION

SEX DETERMINATION		
Sex determination	No.of cases	Percentage %
Male	14	46.7
Female	16	53.3
Total	30	100

Table 17 - Sex determination

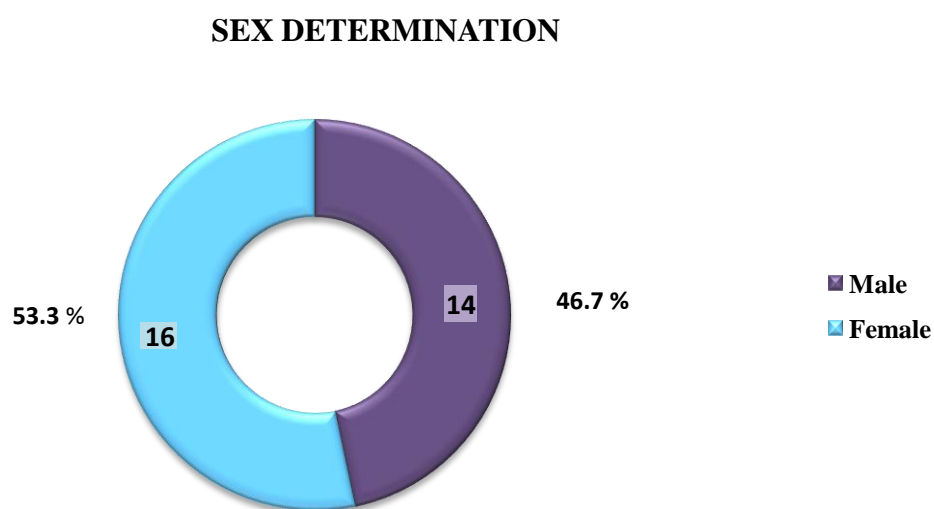


Figure 2 - Sex determination

Observation

Among 30 cases 14 (46.7%) cases were males, 16 (53.3%) cases were females.

Inference

In the study both gender were found affected more or less equally in NIS patient population.

11.3. FOOD HABITS

FOOD HABITS		
Food habits	No of cases	Percentage %
Vegetarian	2	6.7
Non vegetarian	28	93.3
Total	30	100

Table 18 - Food habits

FOOD HABITS

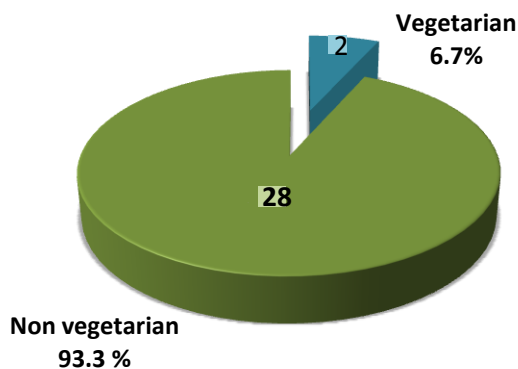


Figure 3- Food habits

Observation

Out of 30 cases, 7% of cases were vegetarian and 95% of cases were non vegetarian.

Inference

Most of the cases were being nonvegetarian. Non vegetarian diet which is considered as thamogunam food and also hard to digest. It can lead to impairment in digestive fire and vitiation of Vatham.

11. 4. SOCIO - ECONOMIC STATUS

SOCIO - ECONOMIC STATUS		
Economic status	No.of cases	Percentage %
Low Income Group	2	6.6
Middle Income Group	27	90
High Income Group	1	3.4
Total	30	100

Table 19 - Socio - Economic status

ECONOMIC STATUS

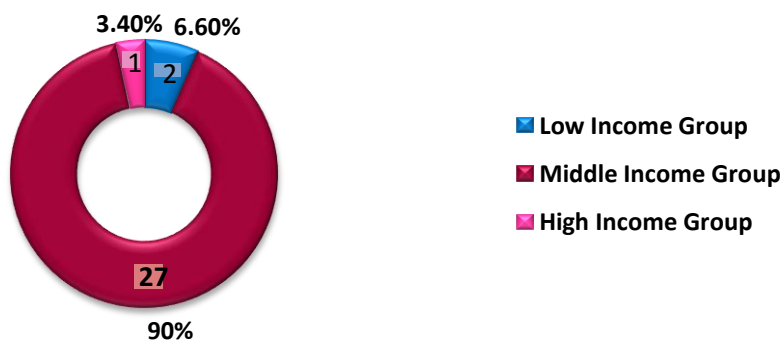


Figure 4- Socio- Economic status

Observation

Among 30 cases of 7(23.3%) were low income group, 27(90 %) were middle income group and 1(3.4 %) were high income group.

Inference

In this study 90 % cases were middle income group. The middle income group people due to their life style and habits are prone to have Netrisoolai Vatham.

11. 5. ETIOLOGY OF NETRISOOLAI VATHAM

Etiology (As per Yugi Vaidya Chinthamani)	No. of Patients	Percentage %
Exposure to cold wind	30	100
Excessive day sleep	5	16.7
Reduced night sleep	10	33.3
Untimely food	12	40
Excessive intake of sour food items	3	10
Excessive intake of bitter, astringent and pungent food items	5	16.7
Chronic Constipation	1	3.3

Table 20 - Etiology of Netrisoolai vatham

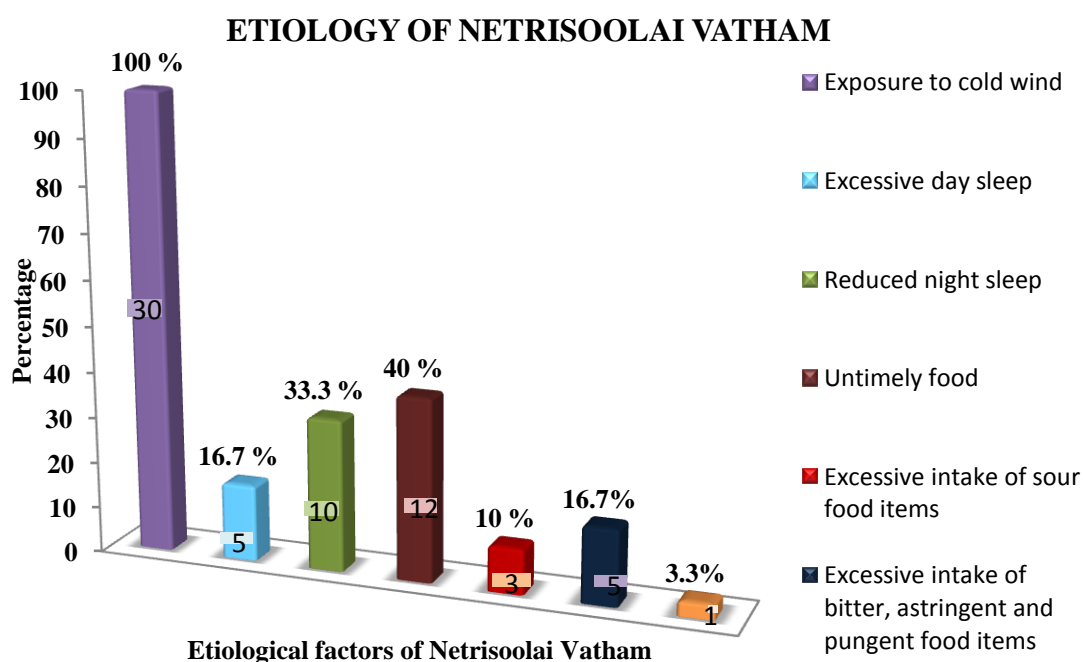


Figure 5 - Etiology

Observation

Out of 30 cases, 100% of patients had history of exposure to cold wind, 16.7 % of cases had history of excessive day sleep, 33.3 % of cases had reduced night sleep, 40 % of cases had untimely food, 10% of cases excessive intake of sour food items, 16.7 % of cases excessive intake of bitter, astringent and pungent food items, 3.3 % of cases had chronic constipation.

Inference

In this study it is inferred that in most of the cases exposure to cold precipitates the condition of Netrisoolai Vatham. Exposure to cold can increase Vatham. Increase in Vatham in site of Kapham causes the disease Netrisoolai Vatham.

11. 6. SYMPTOMS

SYMPTOMS		
Symptoms	No.of cases	Percentage %
Throbbing pain in between eyebrows	30	100
Pain in forehead	30	100
Headache	30	100
Throat pain and Voice change	28	93.4
Pain in nose	18	60
Body pain/weariness of limbs	24	80
Giddiness	25	83.4
Fatigue /Tiredness	30	100

Table 21 - Clinical features

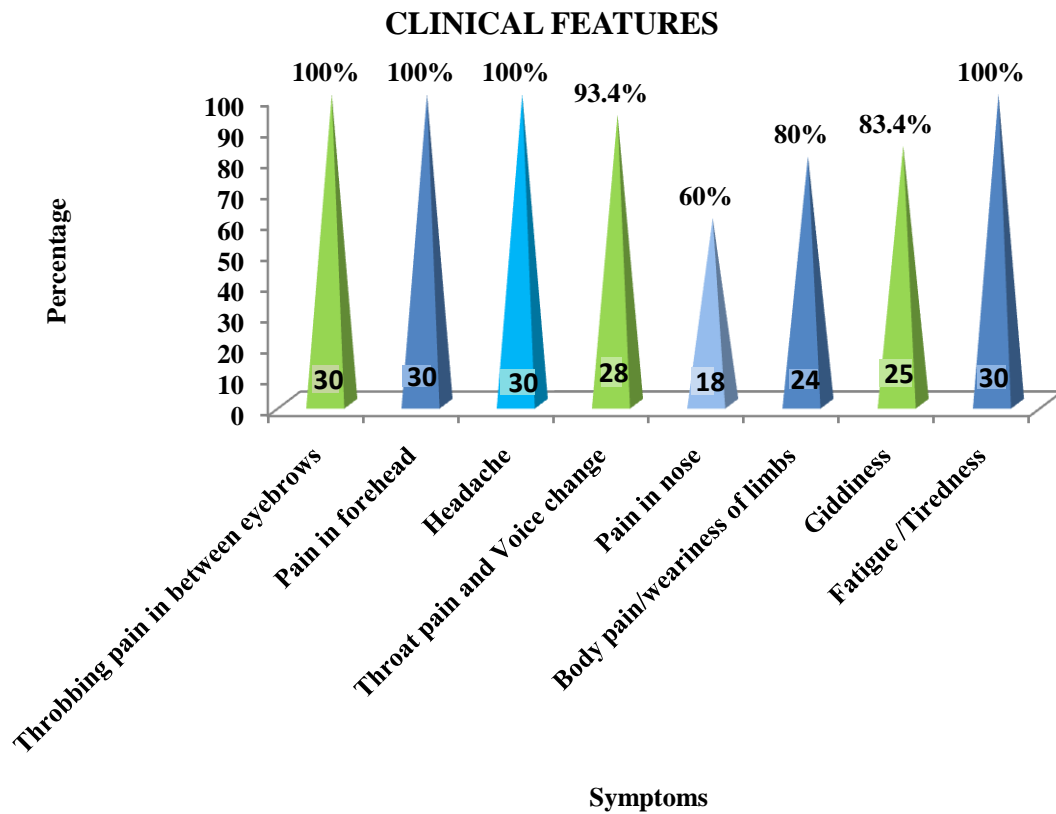


Figure 6 - Clinical features

Observation

Among 30 cases, 100 % of cases had throbbing pain in between eyebrows, pain in forehead and headache and tiredness. 93.4 % of cases had throat pain and voice change, 60 % of cases had pain in nose, 80 % of cases had body pain/weariness of limbs, 83.4 % of cases had giddiness.

Inference

It is inferred from the study that the cluster of symptoms mentioned by Sage Yugimuni can be observed in patients even today. The conceptualization of Sage Yugimuni about the condition of Netrisoolai Vatham holds good to be contemporary medical signs.

11. 7. YAKKAI

S.No	Yakkai	No.of cases	Percentage %
1	Vatham	0	0
2	Vatha Pitham	15	50
3	Vatha Kapham	7	23.3
4	Pitham	0	0
5	Pitha vatham	4	13.4
6	Pitha kapham	1	3.3
7	Kapham	0	0
8	Kapha vatham	3	10
9	Kapha pitham	0	0
	Total	30	100

Table 22 - Yakkai

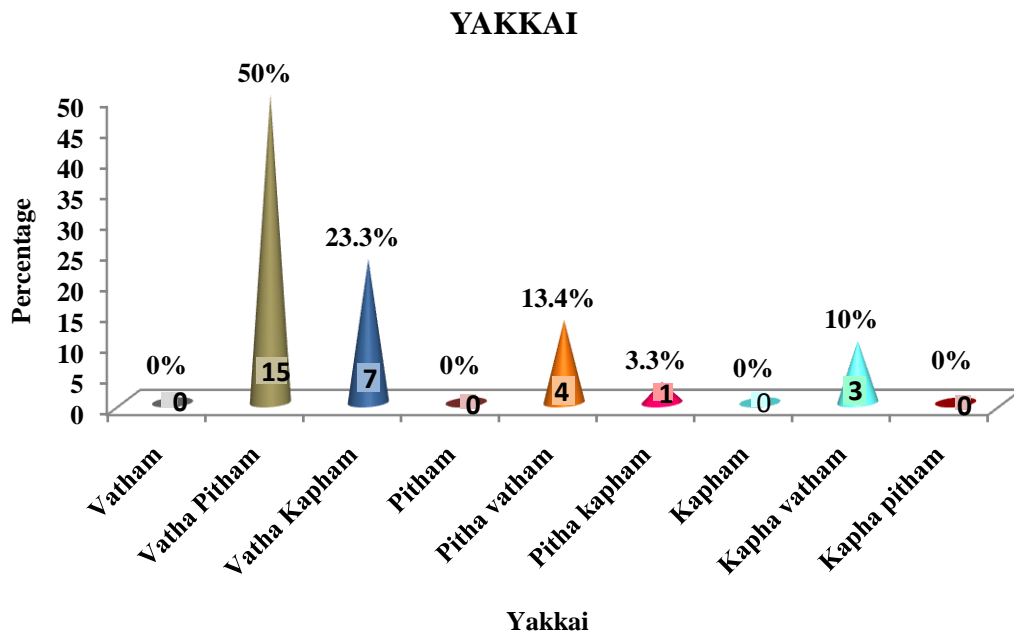


Figure 7- Yakkai

Observation

Among the 30 cases,

- 50 % of cases were vatha pitham
- 23.3 % of cases were vatha kapham
- 13.4 % of cases were pitha vatham
- 3.3 % of cases were pitha kapham
- 10 % of cases were Kapha vatham

Inference

Majority of the study patients 70.3% (22) were of Vatha thontha constitution. Since Netrisoolai Vatham is a vatha disease, Vatha hontha udal is more prone to have this disease.

11. 8. NOI UTRA KAALAM

NOI UTRA KAALAM		
Noi utra kaalam	No.of cases	Percentage %
Kaarkaalam	1	3.3
Koothirkaalam	4	13.3
Munpanikaalam	23	76.7
Pinpanikaalam	2	6.7
Elavenirkaalam	0	0
Mudhuvenirkaalam	0	0
Total	30	100

Table 23 - Noi utra kaalam

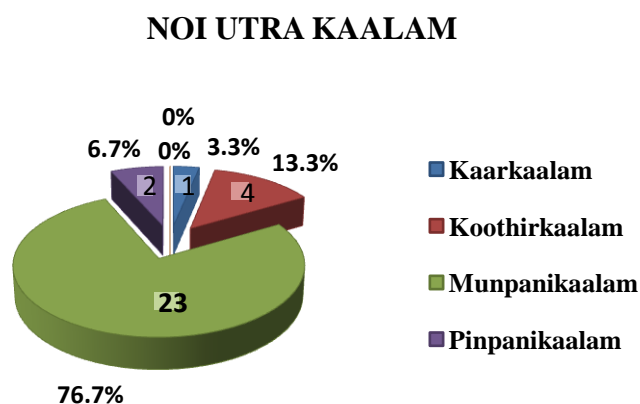


Figure 8 - Noiutra kaalam

Observation

Among 30 cases, 77% of cases had the onset of the disease at Munpani kaalam, 13.3 % of cases had the onset of disease at Koothir kaalam, 6.7 % of cases had the onset of the disease at Pinpani kaalam, 3.3 % of cases had the onset of the disease at Kaar kaalam.

Inference

In this study 77% cases had affected at Munpani kaalam and 13.3 % cases had affected at Koothir kaalam. The occurrence of disease is mostly during Munpani kaalam (Karthikai, Maargazhi), in which the vatham aggravates and cause this disease.

11. 9. NOI UTRA NILAM

NOI UTRA NILAM		
Noi utra Nilam	No.of cases	Percentage %
Kurinji	6	20
Mullai	0	0
Marutham	18	60
Neithal	6	20
Paalai	0	0
Total	30	100

Table 24 - Noi utra Nilam

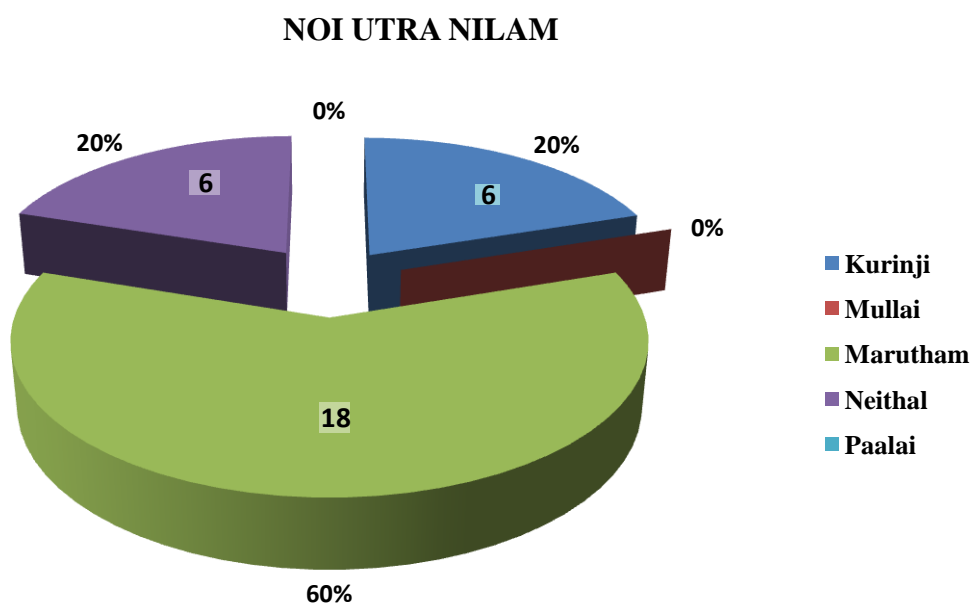


Figure – 9 Noi Utra Nilam

Observation

Out of the 30 cases of study, 60 % cases were residing in Marutha Nilam, 20 % of cases were residing in Neithal Nilam and 20% cases were residing in Kurunji Nilam.

Inference

Majority of the cases were from Marutha Nilam, 20% of cases were from Neithal Nilam and Kurinji Nilam. As per Pathartha Guna Chinthamani, people residing in Neithal are prone to develop Vatha derangements and people residing in Kurinji are prone to develop Kapha diseases. But because of single centric study, (study done in National Institute of Siddha) type and location of place in Marutham area, no specific interference could be made about the association between habitat and disease.

11. 10. GNANENTHIRIYANGAL

GNANENTHIRIYANGAL		
Gnanenthiriyangal	No. of cases	Percentage %
Sevi	2	6.7
Mei	27	90
Kan	5	16.7
Naakku	0	0
Mooku	18	60

Table 25 - Gnanenthiriyangal

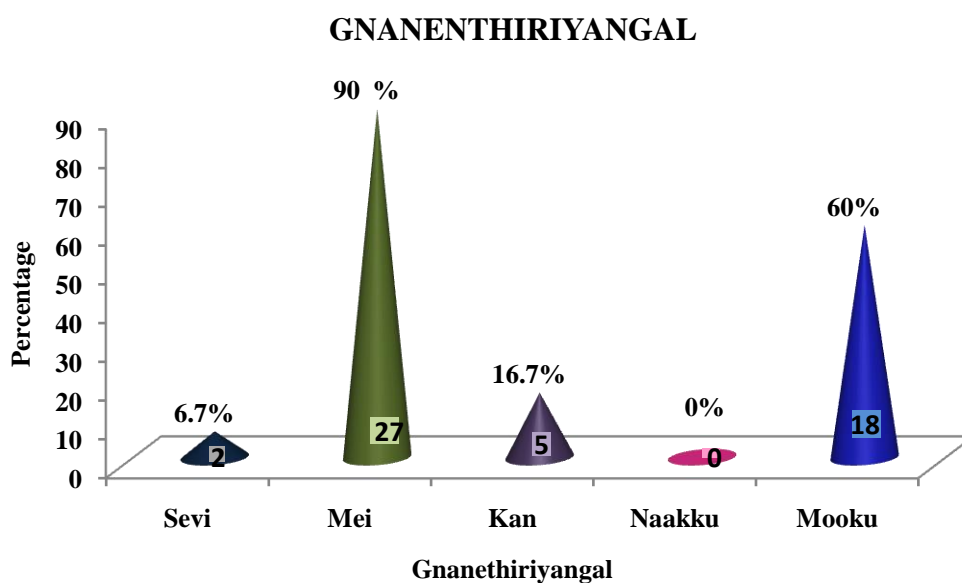


Figure 10 - Gnanenthiriyangal

Observation

Out of 30 cases, 90 % of cases had deranged mei, 16.7 % had kann affected, 60% of cases had affected nose and 6.7 % of cases had sevi affected.

Inference

In this study 90 % of cases were affected in mei, since 27 patients had tenderness in frontal area, Among 16.7% of cases Kann affected due to burning sensation in eyes, 6.7% of cases sevi affected due to ear block and for 60% of cases Mookku affected due to pain in nose.

11.11. KANMENTHIRIYANGAL

KANMENTHIRIYANGAL		
Kanmenthiriyaangal	No.of.cases	Percentage %
Vaai	0	0
Kaal	24	80
Kai	24	80
Eruvai	1	3.3
Karuvai	0	0

Table 26 - Kanmenthiriyaangal

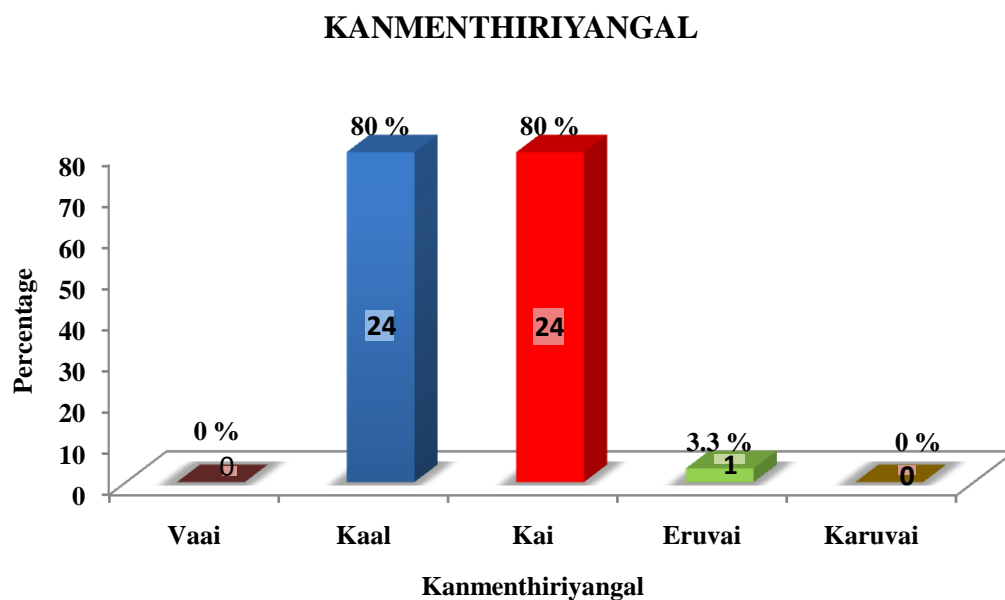


Figure - 11 Kanmenthiriyaangal

Observation

In Kanmenthiriyangal out of 30 cases, 24 cases (80 %) had affected kai, kaal resulting in weariness of limbs, 1% of case eruvai got deranged resulting in constipation.

Inference

In the study majority of cases had kai, kaal affected resulting in pain in upper and lower limbs and eruvai got deranged resulting in constipation.

11. 12. UDAL THATHUKKAL

UDAL THATHUKKAL		
Udal thathukkal	No.of cases	Percentage %
Saaram	30	100
Senneer	25	83.3
Oon	7	23.3
Kozhuppu	2	6.7
Enbu	5	16.7
Moolai	5	16.7
Sukilam/Suronitham	0	0

Table 27 - Udal thathukkal

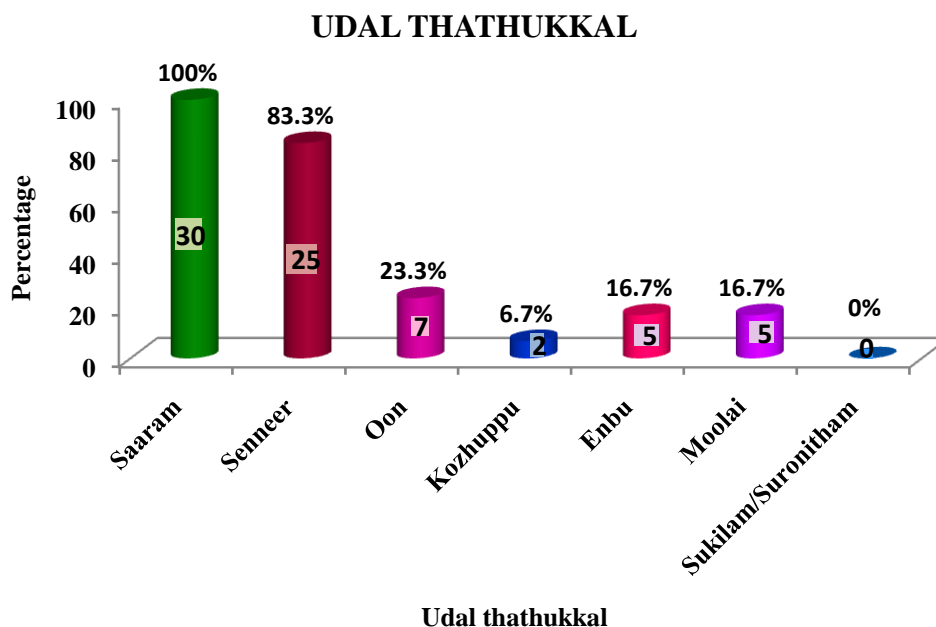


Figure 12 - Udal thathukkal

Observation

Out of 30 cases, 100 % of the cases had deranged Saram, 83.3 % of cases had deranged Senneer, 23.3 % of the cases had deranged Oon, 16.7 % of the cases had deranged Enbu and Moolai and 6.7 % of the cases had deranged Kozhuppu.

Inference

Of all the 30 cases of Netrisoolai Vatham inducted, all of them (100%) have affections in Saaram which indicated that the very presence of Netrisoolai Vatham affected the general vigour of the individuals. The vitiation of Saaram hands down its reflections over Senneer. Oon, enbu, moolai and kozhuppu affected due to weariness of upper and lower limbs, and head ache.

11. 13. UYIR THATHUKKAL - VALI

UYIR THATHUKKAL		
Vali	No.of cases	Percentage %
Pranan (Uyirkkal)	3	10
Abanan (Keezh nokku kaal)	1	3.3
Samanan (Naduk kaal)	30	100
Uthanan (Melnokku kaal)	0	0
Viyanan (Paravu kaal)	30	100
Naagan	0	0
Koorman	0	0
Kirukaran	18	60
Devathathan	30	100
Dhananjeyan	0	0

Table 28 - Uyir Thathukkal-Vali

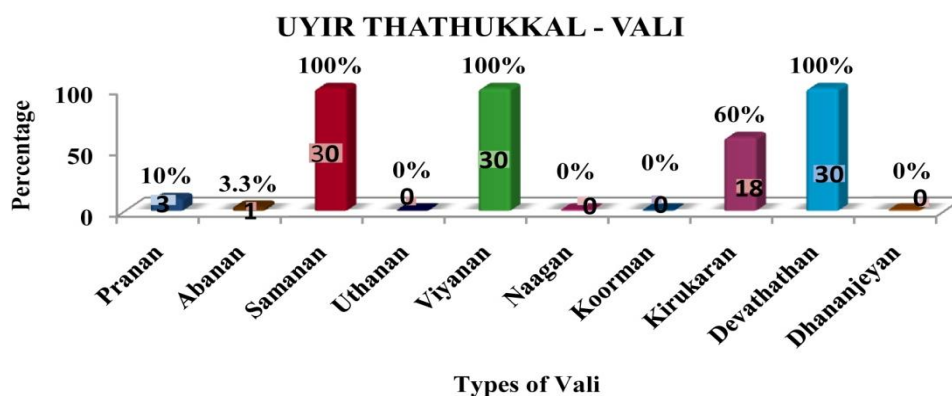


Figure 13 - Uyir Thathukkal-Vali

Observation

Among 30 cases, all the cases had deranged Viyanan, Samanan and Devadathan, 60 % of cases had deranged Kirukaran, 3.3 % of cases had deranged Abanan and all cases had normal Nagan, Koorman, Uthanan and Dhananjayan.

Inference

All the patients inducted in the study had Viyanan, Samanam and Devadathan affected.

11. 14. UYIR THATHUKKAL – AZHAL

UYIR THATHUKKAL		
Azhal	No.of cases	Percentage %
Analagam (Aakku anal)	0	0
Ranjagam (Vanna eri)	0	0
Saathagam (Aatral agni)	5	16.7
Prasagam (Ul oli thee)	0	0
Aalosagam (Nokku anal)	2	6.7

Table - 29 Uyir Thathukkal- Azhal

UYIR THATHUKKAL - AZHAL

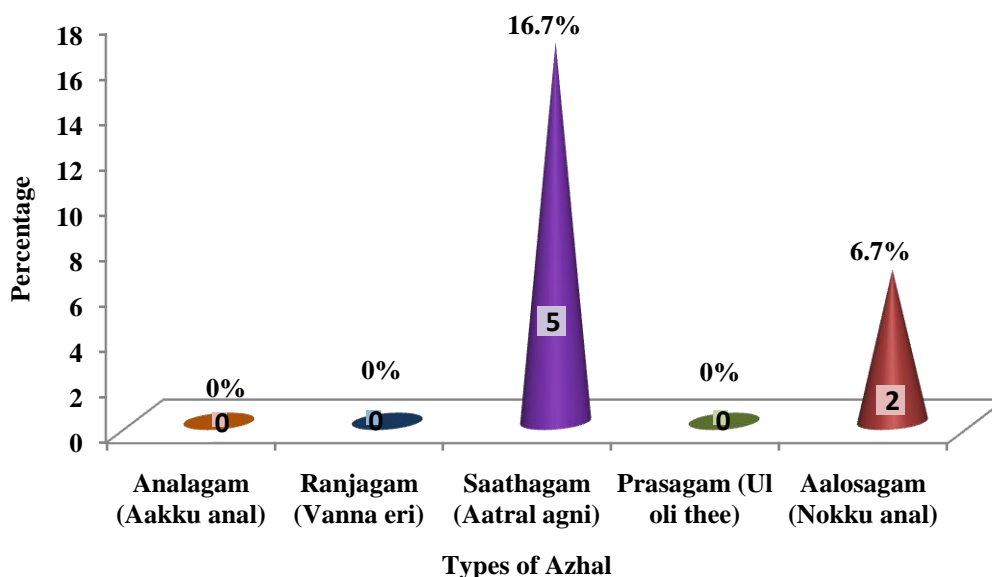


Figure 14 - Uyir Thathukkal-Azhal

Observation

Out of 30 cases, 16.7 % had deranged Saathaga pitham, 6.7 % had deranged Aalosagam and all cases had normal Anal pitham, Ranjagam and Prasagam.

Inference

In majority of cases Saathagam affected.

11. 15. UYIR THATHUKKAL – IYYAM

UYIR THATHUKKAL		
Iyyam	No.of cases	Percentage %
Avalambagam (Ali iyyam)	0	0
Kilethagam (Neerpi iyyam)	0	0
Pothagam (Suvai kaan iyyam)	0	0
Tharpagam (Niraivu iyyam)	2	6.7
Santhigam (Ondri iyyam)	2	6.7

Table - 30 Uyir Thathukkal- Iyyam

UYIR THATHUKKAL - IYYAM

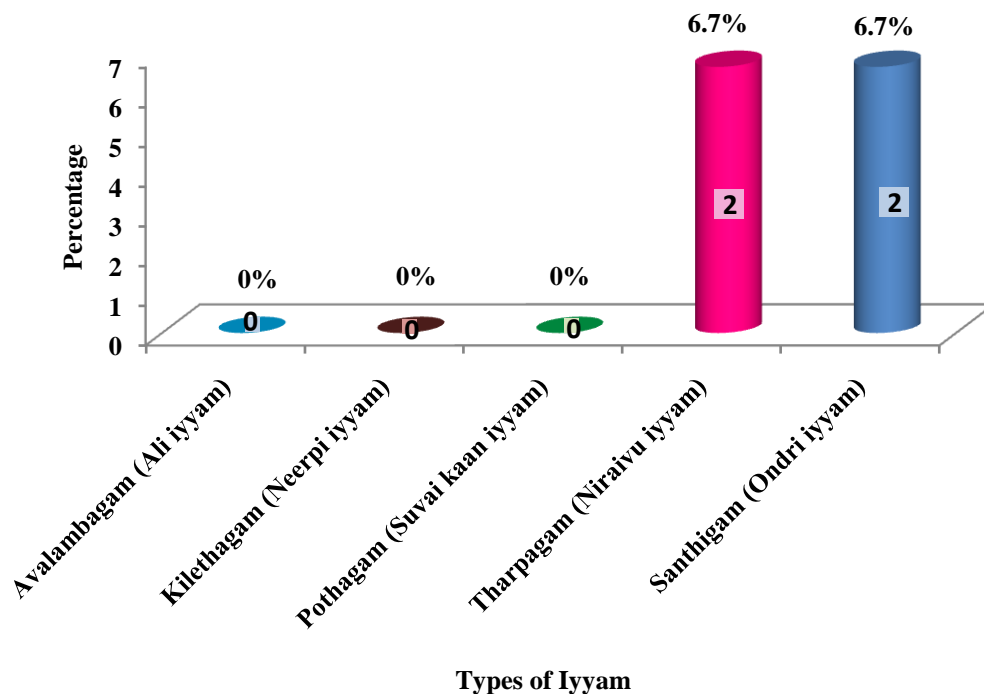


Figure 15 - Uyir Thathukkal- Iyyam

Observation

Out of 30 cases, 6.7 % of cases had deranged Tharpagam and Santhigam.

Inference

Since Tharpagam is the iyyam involved in the cooling of the eyes and structure present in the head it is affected in Netrisoolai Vatham. Santhigam affected due to weariness of upper and lower limbs and joint pain.

11. 16. ENVAGAI THERVUKAL – NAA

Envagaithervugal Naae		No.of cases	Percentage %
Thanmai	Maapadithal	8	26.7
	Vedippu	10	33.3
	Iyalbu	12	40
	Total	30	100
Niram	Karuppu	14	46.8
	Manjal	8	26.6
	Veluppu	8	26.6
	Total	30	100
Suvai	Kaippu	3	10
	Pulippu	14	46.7
	Inippu	13	43.3
	Total	30	100
Vaineerooral	Kuraivu	0	0
	Iyalbu	30	100
	Total	30	100

Table - 31 Envagaithervugal Naa

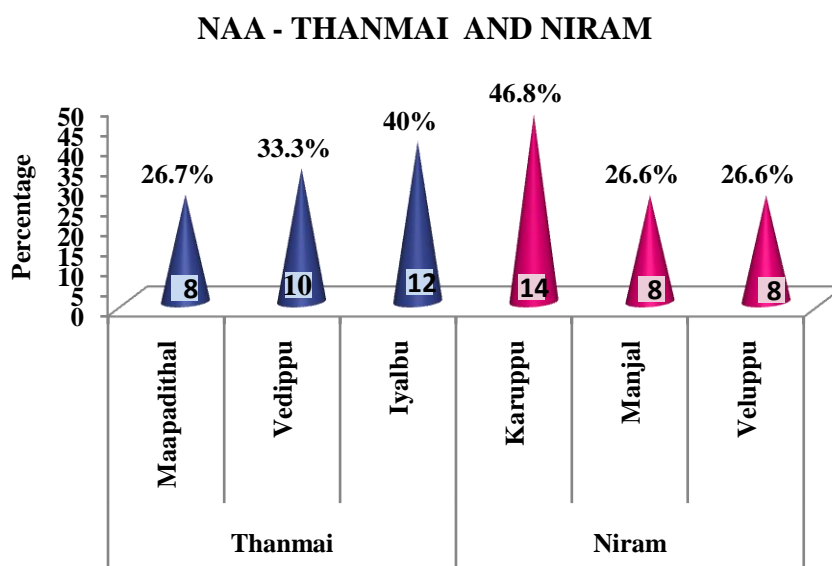


Figure 16 - Naa-Thanmai&Niram

Observation

Among 30 cases, 26.7 % of cases had coated tongue, 33.3 % of cases had fissure in tongue and rest of the 40 % of cases had normal tongue.

Among 30 cases, 46.8 % of cases had dark coloured tongue, 26.6 % of cases had light coloured tongue and 26.6 % of cases had yellow colour tongue.

Inference

In the Study majority of cases had fissured and dark coloured tongue. According to Kannusami Paramparai Vaithiyam fissured and dark coloured tongue is due to deranged Vali. So it may be inferred that Vali is the main factor deranged in Netrisoolai Vatham.

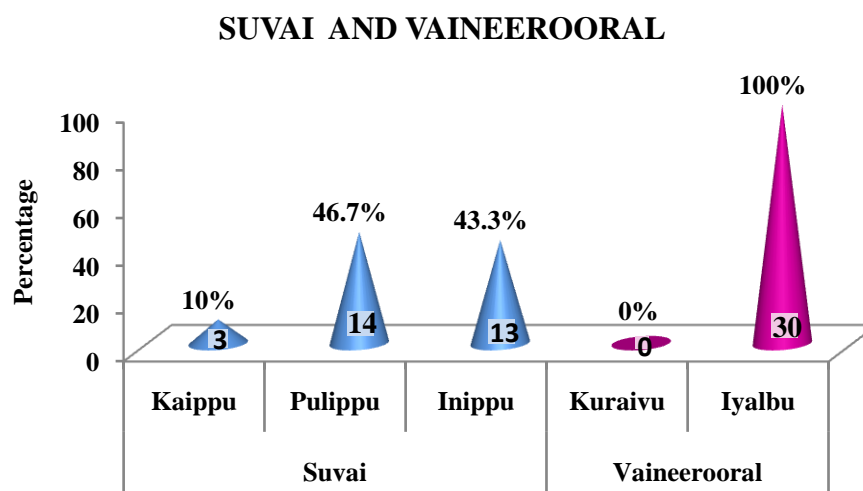


Figure 17 - Naa- Suvai & Vaainerooral

Observation

Among 30 cases, 46.7 % of cases had sour taste in their tongue, 43.3 % of cases had sweet taste in their tongue and 10 % of cases had bitter taste in tongue. Among 30 cases, 100 % had normal salivation.

Inference

In the Study majority of cases had sour and sweet taste in their tongue and normal salivation. As per the text Agathiyar Naadi, sour taste in tongue is a sign of derangement of vali and sweet taste in tongue is a sign of deranged iyyam humour. So it may be inferred that deranged Vali and Iyyam humour forms the base for Netrisoolai Vatham.

11.17. NIRAM, MOZHI AND VIZHI

Niram, Mozhi and Vizhi		No.of.cases	Percentage %
Niram	Karuppu	14	46.8
	Manjal	8	26.6
	Veluppu	8	26.6
	Total		100
Mozhi	Sama oli	2	6.7
	Urattha oli	0	0
	Thazhntha oli	28	93.3
	Total	30	100
Vizhiyin Niram	Karuppu	0	0
	Manjal	0	0
	Sivappu	0	0
	Veluppu	0	0
	Iyalbu	30	100
	Total	30	100
Vizhiyin Thanmai	Kanneer(increased)	1	3.3
	Kan Erichchal	3	10
	Peelai seruthal	0	0
	Iyalbu	26	86.7
	Total	30	100

Table - 32 Niram, Mozhi and Vizhi

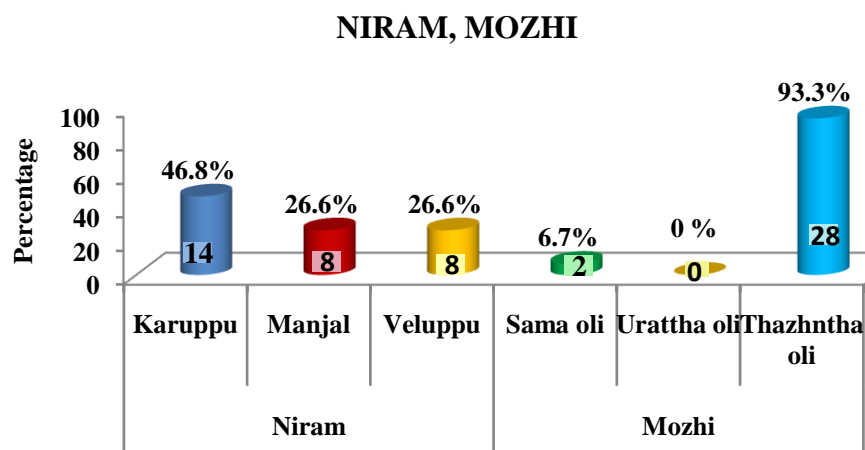


Figure 18 - Niram, Mozhi

Observation

Among 30 cases, 44.8 % of cases were of dark complexion, 26.6 % of cases were of yellow and fair complexion.

Among 30 cases, 6.7 % of cases had normal voice and 93.3 % of cases had low pitched voice.

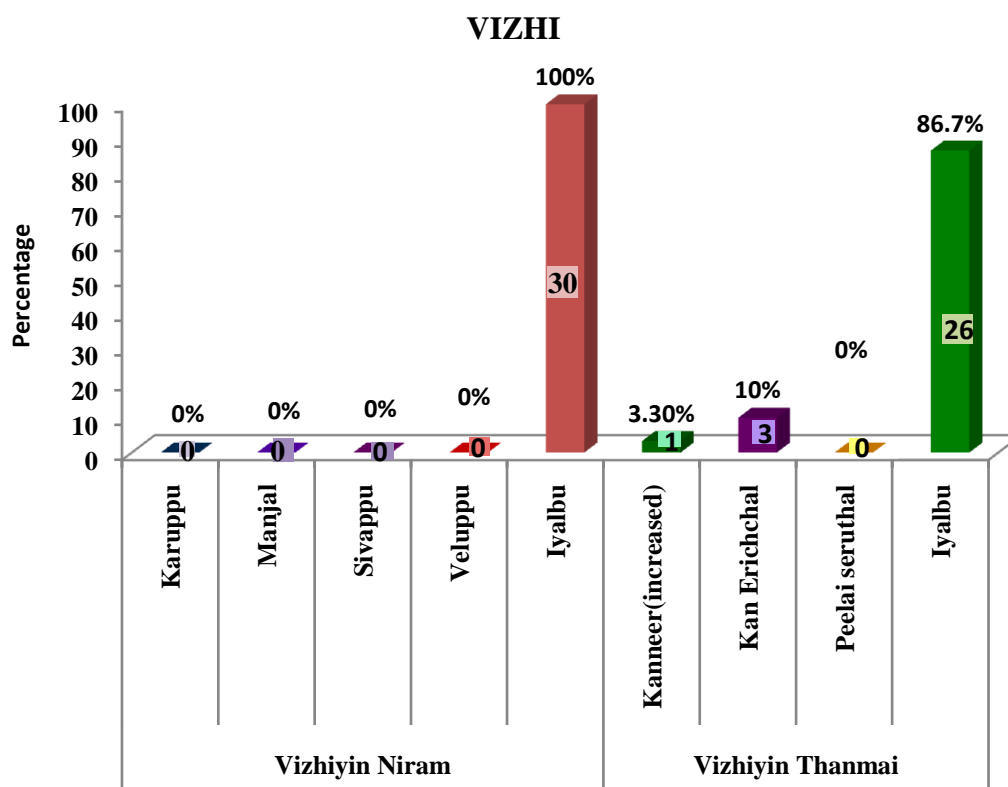


Figure 19 - vizhi

Observation

Out of 30 cases, 100 % of cases had normal eyes. Out of 30 cases, 10 % of patients had burning sensation in eyes, 3.3 % of cases had increased lacrimation.

Inference

A majority of patients reported with black colour complexion and low voice pitch and normal eyes. Black coloured complexion indicated Vatha nature and low pitched voice is due to throat pain and voice change in Netrisoolai Vatham.

11. 18. NAADI

NAADI		No.of cases	Percentage %
Naadi nithanam (Pulse Appraisal)	Vanmai	5	16.7
	Menmai	25	83.3
	Total	30	100
Naadi Panbu (Pulse character)	Thannadai	25	83.4
	Ilaithal	1	3.3
	Kuthithal	3	10
	Thullal	1	3.3
	Total	30	100
Naadi Nadai (Pulse play)	Vatha pitham	17	56.7
	Vatha kabam	0	0
	Pitha vatham	12	40
	Pitha kapham	1	3.3
	Kapha vatham	0	0
	Kapha pitham	0	0
	Total	30	100

Table - 33 Naadi

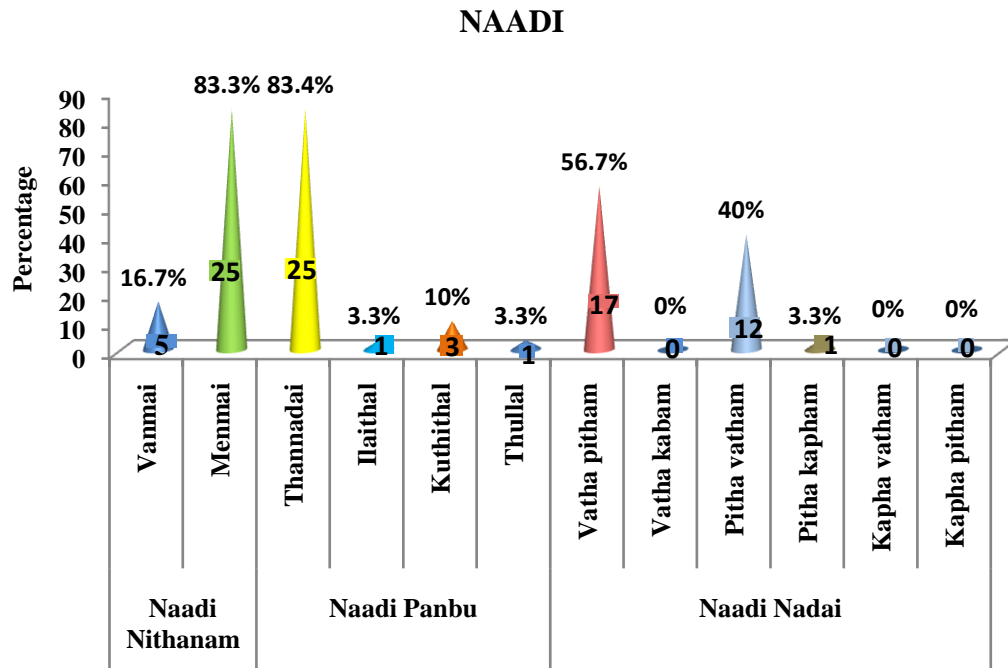


Figure 20 -Naadi

Observation

Out of 30 cases, 16.7 % of cases had Vanmai character and 83.3 % of cases had Menmai character in Naadi nithanam.

Among 30 cases, 83.4 % of cases showed Thannadai, 10 % of cases had Kuthithal, 3.3 % of cases had Ilaithal and Thullal character in their Naadi panbu.

Among 30 cases, 56.7 % of cases had the Naadinadai of Vatha Pitham, 40 % cases had Pitha Vatham, and 3.3 % of cases had Pitha Kabam.

Inference

The prominence of vatham was increasingly felt in the Naadi perception because of the influence by the time period of examination (Vatha Kaalam) and the influence of the disease Netrisoolai Vatham itself.

11.19. SPARISAM

Mei kuri		No.of cases	Percentage %
Veppam	Mitham	16	53.4
	Migu	13	43.3
	Thatpam	1	3.3
	Total	30	100
Viyarvai	Iyalbu	27	90
	Athigam	3	10
	Total	30	100
Thanmai	Thodu vali	27	90
	Udal varatchi	0	0
	Iyalbu	3	10
	Total	30	100

Table - 34 Sparisam

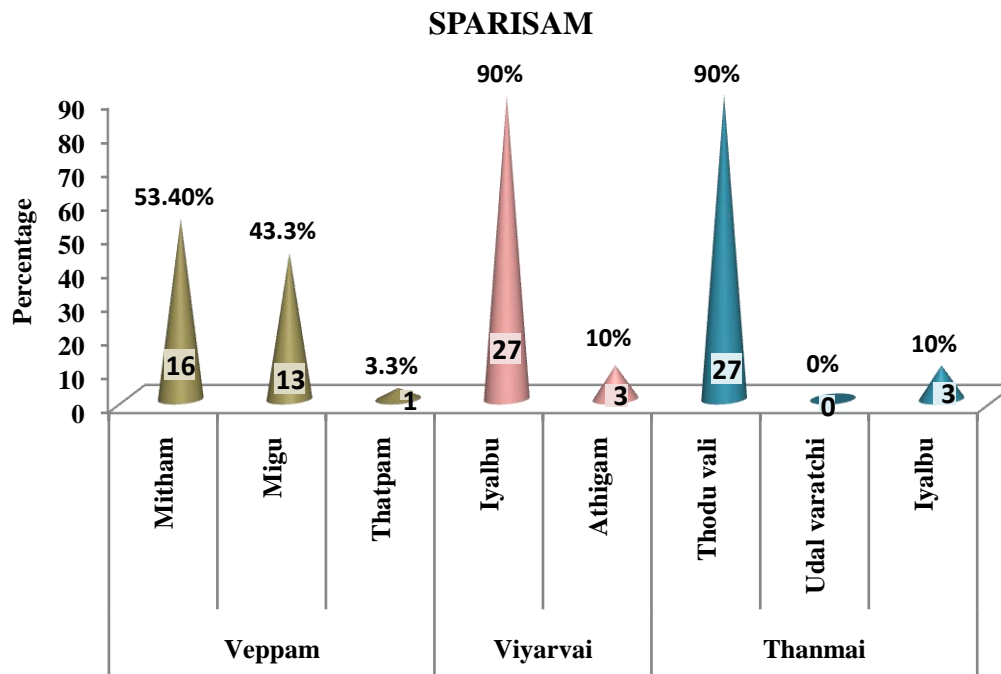


Figure 21- Sparisam

THODUVALI

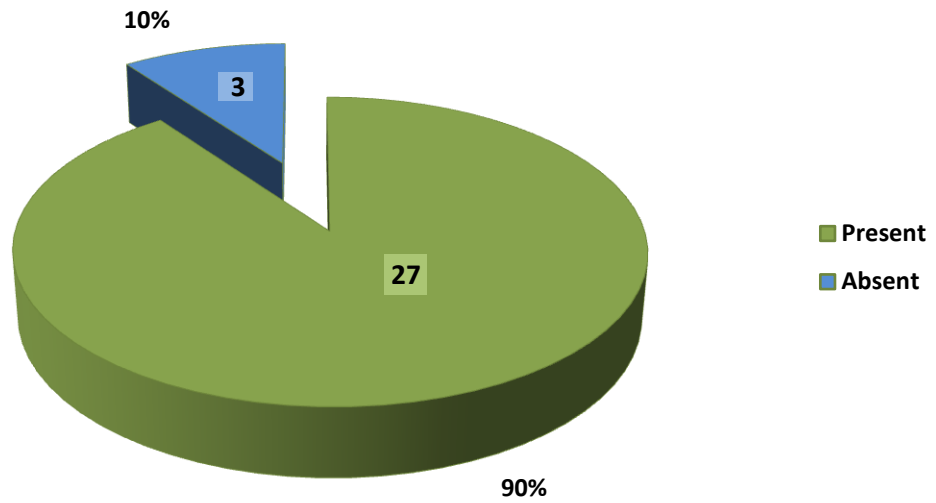


Figure 22 - Thoduvali

Observation

Among 30 cases, 53.4 % of cases had Mitha Veppam, 43.3 % of cases had Migu Veppam and 3.3 % of cases had Thatpam.

Among 30 cases, 10 % of cases had increased (sweating) viyarvai and 90 % of cases had normal sweating.

Among 30 cases, 90 % of cases had thoduvali (Tenderness) and 10 % of cases were without thoduvali.

Inference

A sizable percentage of patients reported with mitha veppam (53.4%), normal sweating (90%) and tenderness in frontal area on examination (90%). According to Therayar Yamagam, a patient's body with mitha veppam (warmer than normal), if he suffers from Vatham. Here it indicated Vatha derangement in Netrisoolai Vatham.

11.20. MALAM

Malam		No .of cases	Percentage %
Niram	Karuppu	1	3.3
	Manjal	29	96.7
	Total	30	100
Thanmai	Mala Sikkal	1	3.3
	Sirutthal	0	0
	Kalichchal	0	0
	Seetham	0	0
	Vemmai	0	0
	Habitual constipation	0	0
	Mucus	0	0
	Blood	0	0

Table - 35 Malam

MALAM

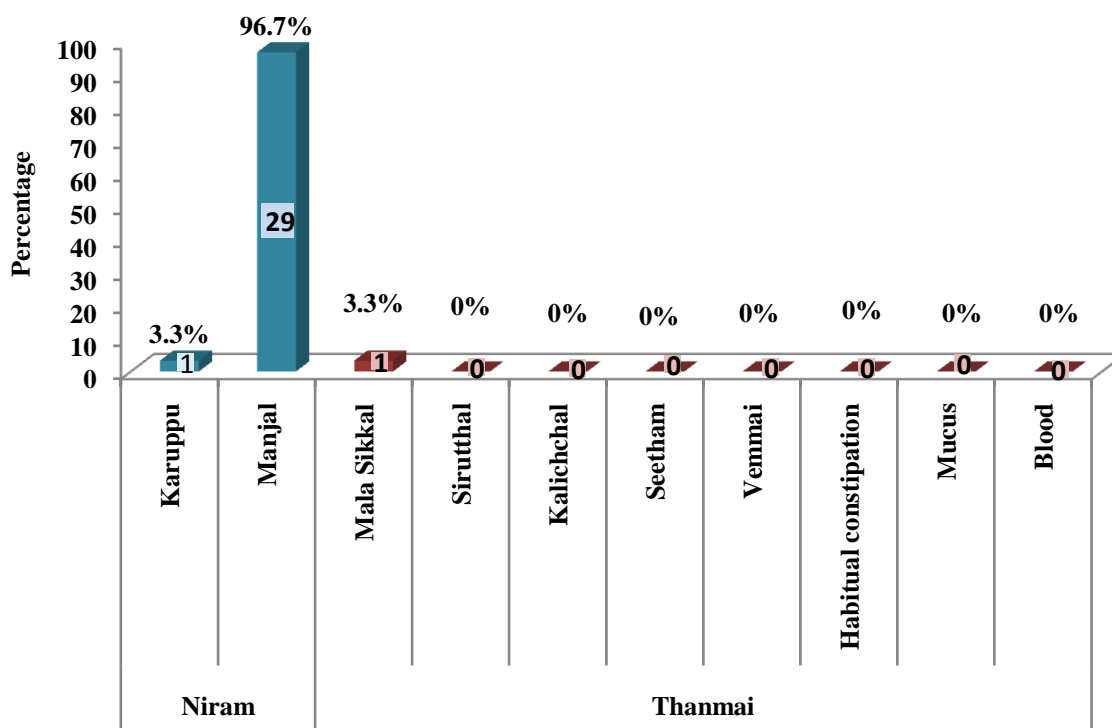


Figure 23- Malam

Observation

Among 30 cases, 3.3 % of cases had Sikkal (Constipation) and rest of the cases had no thanmai abnormality.

Among 30 cases, 29 (96.7 %) of cases have manjal (yellowish) coloured stool, 3.3 % of cases have karuppu (dark) coloured stool.

Inference

Almost all the cases had the character of normal stools. No specific inference could be made from Malam (Stool) examination.

11. 21. MOOTHIRAM

Neer kuri		No.of Cases	Percentage %
Neer Thanmai	Neer Manam(Ammonical)	30	100
	Fruity	0	0
	Total	30	100
Neer Niram	Yellow	10	33.3
	Pale yellow	14	46.7
	Colourless	6	20
	Total	30	100
Nurai	Absent	30	100
	Present	0	0
	Total	30	100
Edai	Iyalbu	30	100
	Total	30	100
Enjal	Iyalbu	30	100
	Athigam	0	0
	Total	30	100
Nei kuri	Round	19	63.4
	Pearl	5	16.8
	Triangular	1	3.3
	Human face	1	3.3
	Semi circular	1	3.3
	Irregular	1	3.3
	Sieve pattern	1	3.3
	Fastly spreading	24	80
	Slowly spreading	1	3.3
	Total	30	100

Table - 36 Moothiram

MOOTHIRAM - THANMAI AND NIRAM

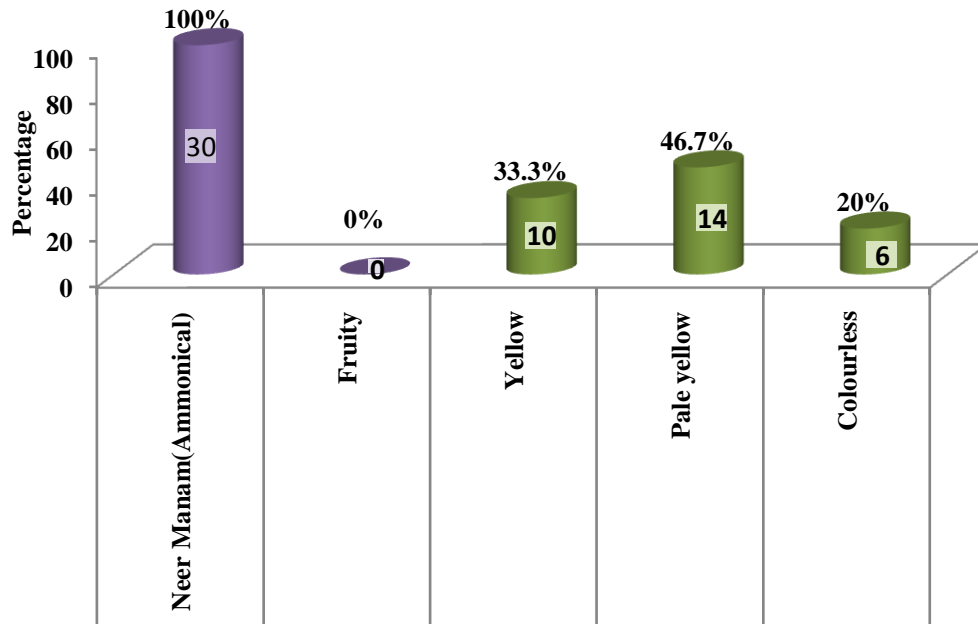


Figure 24 - Moothiram- Thanmai and Niram

Observation

Among 30 cases, 33.3 % of cases had yellow coloured urine and 46.7 % of cases had pale yellow coloured urine, 100 % of cases had mild aromatic smell.

NURAI, EDAI AND ENJAL

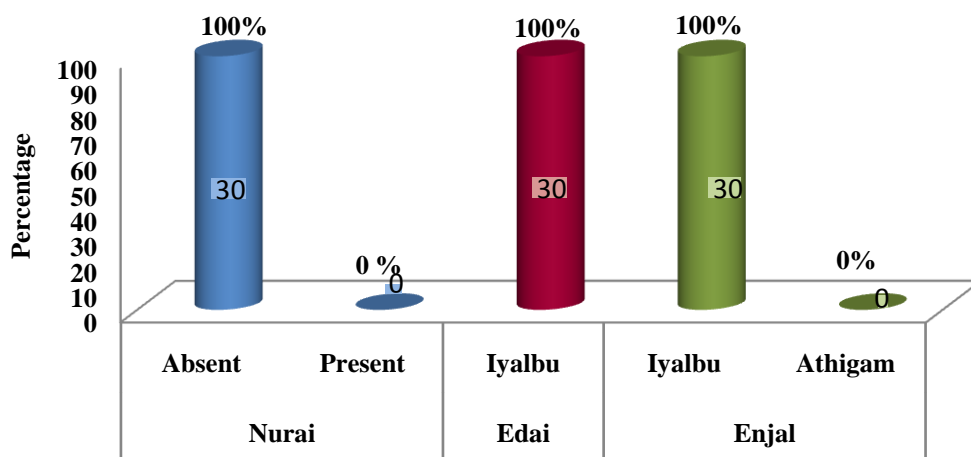


Figure 25 - Moothiram- Nurai, Edai and Enjal

Observation

Among 30 cases, 0% of cases had nurai (froth) present and 100 % of cases had nurai (froth) absent. 100 % of cases had normal volume and specific gravity.

Inference

Almost all cases(46.7%) had normal urine colour (Ila Manjal Niram), mild aromatic smell (100% of cases), normal density(100% of cases) and normal Enjal (100% of cases). No specific inference could be made out in this study from the examination of Neerkkuri.

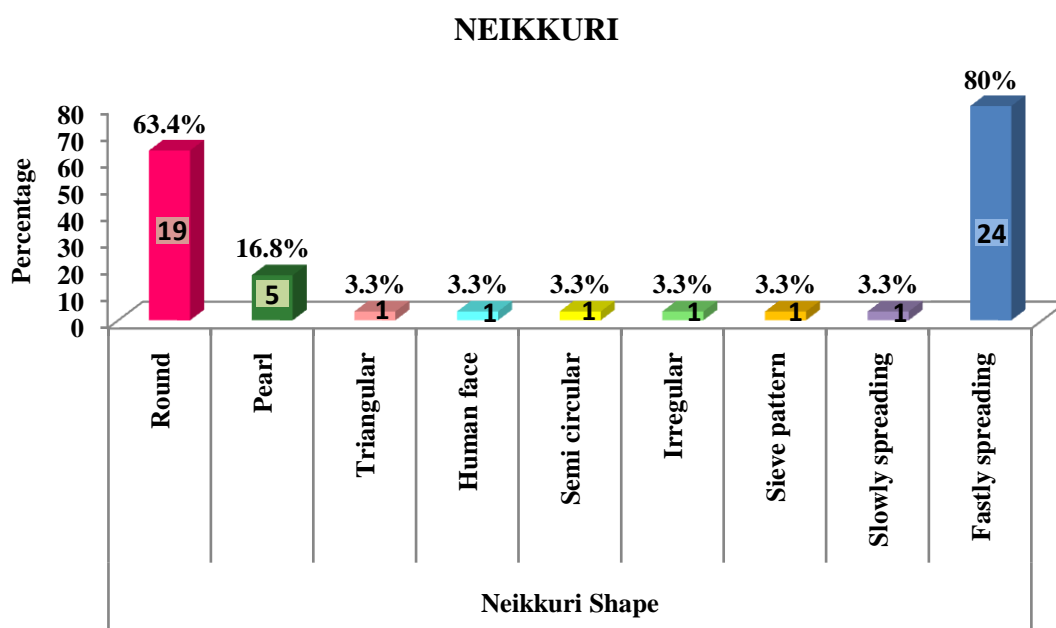


Figure 26 - Neikkuri

Observation

Among 30 cases, 63.4 % of cases had Round shape spread, 16.8 % of cases had Pearl beaded (Muthu) shape, 3.3 % of cases had Triangular, Human face, Semicircular shape, 3.3 % of cases had Slowly spreading (Mellena paraval) and 80% of cases had fastly spreading nature. 3.3 % of cases had sieve (Salladai kann) shape.

Inference

Majority of cases had Round shape Neikkuri (63.4%). In 80% Of the cases (24) neikkuri is fastly spreading in nature. It indicates vatha nature of urine in Netrisoolai vatham patients. 16.8 % cases had Pearl shaped Neikkuri. It indicates Kapham according to Theraiyar 'Neerkkuri Neikkuri' When the urine is diluted the surface tension of urine

approximates to that of water, the oil drop tends to stay as such like a pearl bead. When the urine is constituted with various solutes like bile salts and other chemicals they lower the surface tension of the urine and the oil drop spreads over the urine sample. This explains the saying of Sage Theraiyar “Aravena neendinathe Vatham” “Muthothu nirkin mozhivathen kabame”. Diluted urine is Kapha neer and concentrated urine is more of Vatha humour.

11. 22. MANIKADAI NOOL

Manikadai nool (virarkadai)	No.of. cases	Percentage %
8 Virarkadai	1	3.3
8 ¼ Virarkadai	3	10
8 ½ Virarkadai	4	13.3
8 ¾ Virarkadai	4	13.3
9 Virarkadai	2	6.7
9 ¼ Virarkadai	0	0
9 ½ Virarkadai	0	0
9 ¾ Virarkadai	1	3.3
10 Virarkadai	7	23.3
10 ¼ Virarkadai	4	13.3
10 ½ Virarkadai	1	3.3
10 ¾ Virarkadai	2	6.7
11 Virarkadai	1	3.3

Table - 37 Manikadai nool

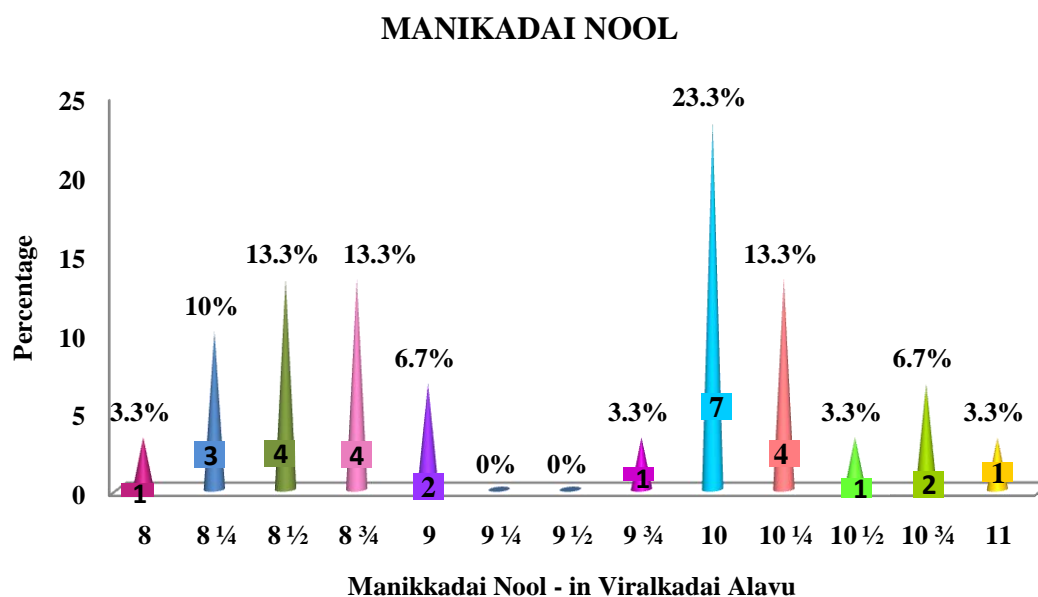


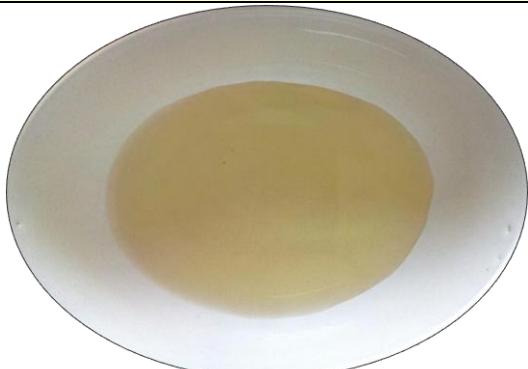


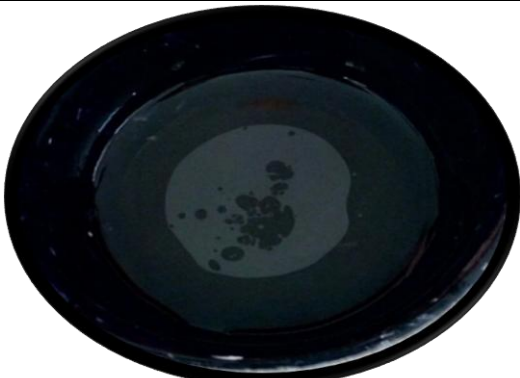


Figure 27 - Manikadai nool



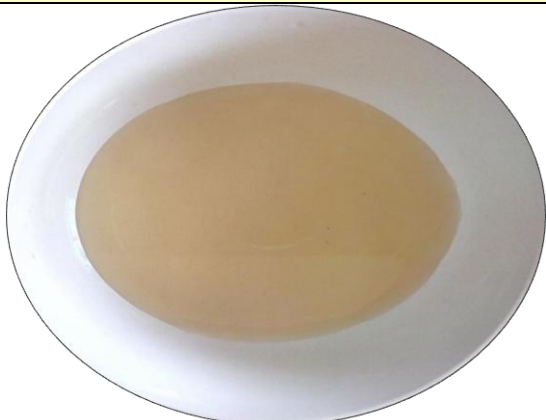



Observation




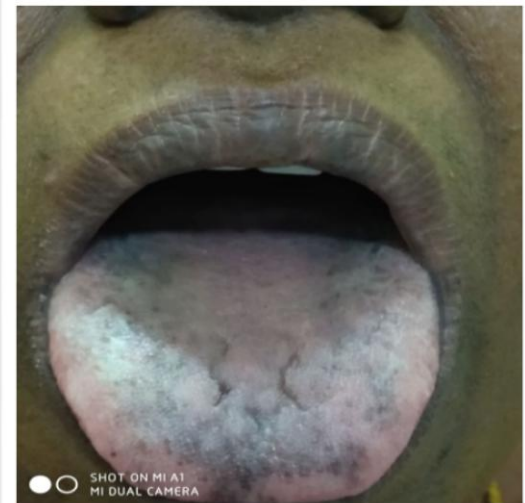
Out of the 30 cases, 23.3 % had 10 viral kadai alavu, 13.3 % of cases had 10 ¼ viral kadai alavu, 13.3 % of cases had 8 ½ viral kadai alavu, 13.3 % of cases had 8 ¾ viral kadai alavu, 10 % of cases had 8 ¼ viral kadai alavu, 6.7 % of cases had 9 and 10 ¾ viral kadai alavu, 3.3 % of cases had 8, 9 ¾, 10 ¼ and 11 viral kadai alavu.

Inference

In manikkadai nool study, 23.3 % of cases had 10 viral kadaialavu, 13.3 % of cases had 10 ¼, 8 ½ and 8 ¾ viral kadaialavu, and 10% of cases had 8 ¼ viral kadaialavu. As per siddha text, no indication for Netrisoolai Vatham. Therefore the patients with the range of 8 -9 and 9 ¾ - 10 ¾ wrist circumferential finger breadth may be referred to have a predilection to develop Netrisoolai Vatham. Such people may be advised to follow the precautionary steps to avoid the development of Netrisoolai Vatham as a preventive measure.

NEERKKURI AND NEIKKURI EXAMINATION	
NEERKKURI	NEIKKURI
	
OP No. - G73372 Pale yellow	OP No. - G73372 Triangular shape
	
OP No. - K 06164 Dark Yellow	OP No. - K 06164 Round shape with small vacuoles
	
OP No. - J67292 Yellow colour	OP No. - J67292 Round shape with single Vacuole

NEERKKURI AND NEIKKURI EXAMINATION	
NEERKKURI	NEIKKURI
	
OP No. - J93251 Colourless	OP No. - J 93251 Pearl shape
	
OP No. - I 11887 Pale yellow	OP No. - I 11887 Round shape
	
OP No. - J 10613 Colourless	OP No. - J 10613 Pearl shape

VIZHI & NAA EXAMINATION	
VIZHI	
	
OP No. J86962 Normal eye	OP No. K00488 Pallor eye
NAA	
	
OP No. H39929 Coated Tongue	OP No. J10612 Fissured tongue

12. DISCUSSION

Netrisoolai Vatham is described by Sage Yugi in Yugi vaithya Chinthamani-800 and it correlates well with Frontal Sinusitis. The author had screened 80 patients with complaints of head ache and associated symptoms in the In Patient and Out Patient Departments of National Institute of Siddha. Among those 80 cases, 30 cases were enrolled in the study and observed for symptoms and signs. At the end of the study on Netrisoolai Vatham, the author discusses on significant facts about the disease with relevant justifications from Siddha and Modern literature based on observations and results.

The retrospective review of the disease Netrisoolai Vatham begins from the correlation with the signs and symptoms of the disease Frontal Sinusitis and initial sorting of information among the data extracted for analysis including age, sex, etiological factors, clinical features and their radiological findings.

Distribution of cases by Age group

Majority of diseased cases, (43.4%) in the study were of 15-30 years age group. Next to this 33.3% cases fell under the age group of 31-45yrs, 7 (23.3%) cases were between the age group of 46-60 yrs. This shows that the prevalence of Netrisoolai Vatham is presented more in adolescent (15+) age categories. The 15-30 years age group is normally the socially and physically active age group having more chances for exposure to the exterior environment. It may be because of increase in environmental pollution and changes in life style practices like increased intake of aerated beverages, fast foods, etc. which are hazardous to health. So people of this age group are advised to change their life style such as avoiding prolonged exposure to exterior environment, avoid drinking chilled beverages etc.

In this study both gender were found affected more or less equally.

Distribution of cases by Diet:

Among 30 cases of Netrisoolai Vatham, 93.3 % cases were non vegetarian, and 6.7 % cases were vegetarian. Most of them were non vegetarians because non vegetarians are more prevalent in general population. The general population status is reflected in the study population and hence no specific inference could be made with respect to this study.

Distribution of cases by Paruvakaalam:

Among 30 cases, 77% of cases had the onset of the disease at Munpani kaalam, 13.3 % of cases had the onset of disease at Koothir kaalam, 6.7 % of cases had the onset of the disease at Pinpani kaalam, 3.3 % of cases had the onset of the disease at Kaar kaalam. The occurrence of disease has been mostly during Munpani kaalam (Karthikai, Maargazhi). According to Kannusamy Paramparai Vaithiyam in Karthikai and Maargazhi vatham aggravates and causes this disease.

Distribution of cases by Thinai

Among the 30 cases, 60 % cases were residing in Marutha Nilam, 20 % of cases were residing in Neithal Nilam and 20% of cases in Kurinji Nilam. As per Patharthaguna Chinthamani, people residing in Neithal and Kurinji region are prone to develop Vatha and Kapha derangements. But because of single centric study, (Study done in National Institute of Siddha type and the location of study place in Marutham area, this could not be properly inferred.

Distribution of cases by Clinical features

According to Yugi Vaidya Chinthamani, the symptoms of Netrisoolai Vatham are given as throbbing pain in the intervening part of the eyebrows, pain in forehead, tiredness, throat pain and voice change, pain in nose, body pain, weariness of limbs and giddiness. In this study all the cases had throbbing pain in between eyebrows, pain in forehead and headache and tiredness. 93.4 % of cases had throat pain and voice change, 60 % of cases had complaints of pain in nose, 80 % of cases had body pain/weariness of limbs, 83.4 % of cases had giddiness. It is evident from the study that the symptoms of Netrisoolai Vatham mentioned by Yugimuni could be observed in patients even today and holds good to the present day classification of medical signs of frontal sinusitis.

Distribution of cases by Iymporikal

In Iympulungal (five senses), 27 % of cases had deranged mei due to tenderness in frontal area. According to Siddha Maruthuvanga Churukkam, Mei is composed of vayu and it feels the touch. Here mei is affected due to burning sensation in eyes. 16.7 % of patients had kann (burning sensation present) affected, 60% of cases had affected nose (nasal pain) and 6.7 % of cases had sevi (ear block) affected.

Distribution of cases by affected Kanmentheriyangal

Out of 30 cases, 24 cases (80 %) had affected kai, kaal resulting in weariness of limbs, 1% of case eruvai component got deranged resulting in constipation.

Distribution of cases by Uyir Thathukkal**Derangement in vali kutram**

Among 30 cases Uyir Thathukal vali ,all the cases had deranged Viyanan, Samanan and Devadathan, 60 % of cases had deranged Kirukaran, 3.3 % of cases had deranged Abanan and all cases had normal Nagan, Koorman, Uthanan and Dhananjayan. Reduction in strength and vertigo are attributed to the features of increased vali kutram, feeble voice body pain decreased activities and syncope are the features of decreased vali humour. Hence it is inferred that at the early onset of the disease the patients had increased vali kutram and later on vali kutram decreases in chronic patients. All cases had presented with head ache and body pain. Viyanan is responsible for sensation of pain and tiredness attributed to Devadathan.

Derangement in Azhal kutram

Among 30 cases, 16.7 % had deranged Saathaga pitham, 6.7 % had deranged Aalosagam and all cases had normal Anal pitham, Ranjagam and Prasagam. From the study on five types of pitham, the component of pitham connected with activeness and vision are affected.

Derangement in Iyya kutram

From the study on five types of kapham, The components of Kapham connected with cooling of the eyes and movements were affected. Out of 30 cases, 6.7 % of cases had deranged Tharpagam and Santhigam. Since Tharpagam is involved in the cooling of the eyes and structures present in the head, it is considered to be affected due to the presentation of burning sensation in eyes. Santhigam is affected due to pain in joints.

Distribution of cases by Udal Thathukkal

Out of 30 cases, all of them had deranged Saram, 83.3 % of cases had deranged Senneer, 23.3 % of the cases had deranged Oon, 16.7 % of the cases had deranged Enbu and Moolai and 6.7 % of the cases had deranged Kozhuppu. Of all the cases of Netrisoolai Vatham inducted, almost all of them had affections in Saaram which indicated that the very presence of Netrisoolai Vatham affected the general vigour of the individuals. The vitiation of Saaram hands down its reflections over Senneer. So drugs that are specific to strengthen this udal thathukkal can be prescribed.

Distribution of cases by Thegi

Among the 30 cases, 50 % of cases were vatha pitham, 23.3 % of cases were vatha Kapham, 13.4 % of cases were pitha vatham, 3.3 % of cases were pitha kapham, 10 % of cases were Kaba vatham. Majority of study patients were of vatha pitham and vatha kabam temperament. So it is inferred that patients with vatha thontha temperament are more prone to develop Netrisoolai vatham as compared to others.

Distribution of cases by Thegiyin niram

Among 30 cases, 44.8 % of cases were of dark complexion, 26.6 % of cases were of yellow and fair complexion. According to Kannusami Paramparai Vaithiyam, a person with vatha disease will have a physique of darker complexion. From this it is inferred that deranged vatha forms the base for Netrisoolai Vatham.

Distribution of cases by Naadi examination

Out of 30 cases, 16.7 % of cases had Vanmai character and 83.3 % of cases had Menmai character in Naadi nithanam. Among 30 cases, 83.4 % of cases showed Thannadai, 10 % of cases had Kuthithal, 3.3 % of cases had Ilaithal and Thullal character in their Naadi panbu. Among 30 cases, 56.7 % of cases had the Naadinadai of Vatha Pitham, 40 % cases had Pitha Vatham, and 3.3 % of cases had Pitha Kabam. The prominence of vatham was increasingly felt in the Naadi perception because of the influence by the time period of examination (Vatha Kaalam) and the influence of the disease Netrisoolai Vatham itself.

Distribution of cases by Sparisam

Among 30 cases, 53.4 % of cases had Mitha Veppam, 43.3 % of cases had Migu Veppam and 3.3 % of cases had Thatpam. 10 % of cases had increased (sweating) viyarvai and 90 % of cases had normal sweating. Out of 30 cases, 90 % of cases had thoduvali (Tenderness) and 10 % of cases were without thoduvali.

Distribution of cases by Naa examination

Among 30 cases, 26.7 % of cases had coated tongue, 33.3 % of cases had fissure in tongue and rest of the 40 % of cases had normal tongue. Out of 30 cases, 46.8 % of cases had dark coloured tongue, 26.6 % of cases had light coloured tongue and 26.6 % of cases had yellow colour tongue. Among the cases, 46.7 % of cases had sour taste in their tongue, 43.3 % of cases had sweet taste sensed in their tongue and 10 % of cases had bitter taste lingering in tongue. Among 30 cases, all had normal salivation. In the Study

majority of cases had sour and sweet taste in their tongue and normal salivation. As per the text Agathiyar Naadi, sour taste felt in tongue is a sign of derangement of vali and sweet taste in tongue is a sign of deranged iyyam humour. So it may be inferred that deranged Vali and Iyyam humour forms the base for Netrisoolai Vatham.

Distribution of cases by Mozhi

Among 30 cases, 86.7 % of cases had normal voice and 13.3 % of cases had low pitched voice. As per the text Theraiyar Yamagam, the voice of Vatha patient is normal. So it may be inferred that mainly vali kutram forms the base for Netrisoolai Vatham

Distribution of cases by Vizhi

All the 30 cases had normal eyes and vision. Among the cases, 10 % of patients had burning sensation in eyes, 3.3 % of cases had increased lacrimation. No specific inference could be made from this.

Distribution of cases by Malam

Among 30 cases, 3.3 % of cases had Sikkal (Constipation) and rest of the cases had no thanmai abnormality. Out of 30, 29 (96.7 %) of cases have manjal (yellowish) coloured stool, 3.3 % of cases have karuppu (dark) coloured stool. No specific inference could be made from this study.

Distribution of cases by Neerkkuri

Among 30 cases, 33.3 % of cases had yellow coloured urine and 46.7 % of cases had pale yellow coloured urine, and rest of the patients had colourless urine. As per the literature, if the urine is colourless and clear, the patient may be affected by vatha disease. 100 % of cases had mild aromatic smell. 0% of cases had nurai (froth) present and all the 30 cases had nurai (froth) absent and all of them had normal volume and specific gravity of the urine voided.

Distribution of cases by Neikkuri

Among 30 cases, 19 (63.4 %) cases had Round shaped spread, 16.8 % of cases had Pearl beaded (Muthu) shape, 3.3 % of cases had Triangular, Human face, Semicircular shape, 3.3 % of cases had Slowly spreading (Mellena paraval), 80% (24) of cases had fastly spreading nature and 3.3 % of cases had sieve (Salladai kann) shape. Majority of cases had Round shape Neikkuri (63.4%). As per the literature, ring like formation on the upper surface of the urine indicates heaviness of the head and drowsiness.

In 80% Of the cases (24) neikkuri was readily spreading in nature. It indicated vatha nature of urine in Netrisoolai vatham patients. 16.8 % cases had Pearl shaped Neikkuri. It indicates Kabam according to Sage Theraiyar ‘Neerkkuri Neikkuri’ When the urine is diluted the surface tension of urine approximates to that of water, the oil drop tends to stay as such like a pearl bead. When the urine is constituted with various solutes like bile salts and other chemicals they lower the surface tension of the urine and the oil drop spreads over the urine sample. This explains the saying of Sage Theraiyar “Aravena neendinathe Vatham” “Muthothu nirkin mozhivathen kabame”. Diluted urine is Kapha neer and concentrated urine is more of Vatha humour.

Distribution of cases by Manikadai nool

Of the 30 cases, 23.3 % had 10 viral kadai alavu, 13.3 % of cases had $10\frac{1}{4}$ viral kadai alavu, 13.3 % of cases had $8\frac{1}{2}$ viral kadai alavu, 13.3 % of cases had $8\frac{3}{4}$ viral kadai alavu, 10 % of cases had $8\frac{1}{4}$ viral kadai alavu, 6.7 % of cases had 9 and $10\frac{3}{4}$ viral kadai alavu, 3.3 % of cases had $8, 9\frac{3}{4}, 10\frac{1}{4}$ and 11 viral kadai alavu. In the Agasthiyar Choodamani Kayiru Soothiram, a treatise writtern by Sage Agathiyar, the wrist circumsteric sign for Peenisam and kabala (skull) diseases has been given as 8, $8\frac{1}{4}$, and $9\frac{1}{4}$. This means that diseases pertaining to the head fall in a wrist circumetric range between 8-10 roughly. In this study it was observed that few cases fell within the above range of fingerbreadths and some fall out of the given range. As per siddha text, no indication for Netrisoolai Vatham. Therefore the patients with the range of $10-10\frac{1}{4}$ and $8\frac{1}{2}-8\frac{3}{4}$ wrist circumetric finger breadth may be inferred to have a predilection to develop Netrisoolai Vatham. Such people may be advised to follow the precautionary steps to avoid the development of Netrisoolai Vatham as a preventive measure.

Distribution of cases by Thoduvali, laboratory investigations and X ray findings

Among 30 cases, 90 % of cases had tenderness in frontal sinuses (27), In X ray findings, 76.7 % (23) of cases had haziness in frontal sinuses suggestive of frontal sinusitis, 56.7% (17) of cases had deviated nasal septum, 13.3% (4) of cases had hypoplastic frontal sinuses and 53.4% of cases had inferior turbinate hypertrophy. 16.7 % (5) patients had normal visualised paranasal sinuses in X ray investigation.

In the routine hematology, in 26.7% (8) of the cases the erythrocyte sedimentation rate and in 13.3 % (4) of the cases absolute eosinophil count were slightly increased. Other routine hematology values were within normal limits.

All the signs and symptoms mentioned by Yugimuni about Netrisoolai Vatham are found in case of Frontal sinusitis consistently, X ray findings of majority of patients were reported with haziness of frontal sinuses and deviated nasal septum. Therefore the diagnosis Frontal sinusitis may considered equivalent to that of Netrisoolai Vatham mentioned in Yugi Vaidya Chinthamani.

13. SUMMARY AND CONCLUSION

Netrisoolai Vatham a clinical entity was described by Sage Yugi in his wisdom. The study conducted has come out with excellent results validating the clinical features of Netrisoolai Vatham elucidated in an ultra short poetic segment by Yugi.

The study was aimed at evolving a set of exclusive Siddha diagnostic findings for Netrisoolai Vatham with the observation and inference of various parameters like Naadi, Neikkuri and disease acquired season, it can be concluded that all of them point to the development or vitiation of humour leading to the disease Netrisoolai Vatham .

The patient reported with the symptoms of Netrisoolai Vatham were subjected to the standard set of investigations, the results and findings of the investigations were suggestive of Netrisoolai Vatham according to modern classification of disease.

Manikadai Nool and Neikkuri findings might help in the identifying of preponderance in a person to develop Netrisoolai Vatham hence it can be used as a screening measure to advise the preventive measures well in advance.

Almost all the patients diagnosed as Netrisoolai Vatham had positive X ray findings of Frontal sinusitis and tenderness present in the frontal area on palpation, conforming to the correlation of disease with Frontal sinusitis..

Interestingly, it was found that the symptoms presented by the patients in the study were those of a constant subset of symptoms of frontal sinusitis explained in the present day classification. It correlated with all of the symptoms mentioned by Yugimuni under Netrisoolai Vatham.

Thus the author concludes by throwing lights on validation of symptomatology and exclusive Siddha diagnostic methodology for Netrisoolai Vatham, so that a physician can arrive at proper treatment procedures by rightly diagnosing the disease.

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PMCID: PMC3360444.



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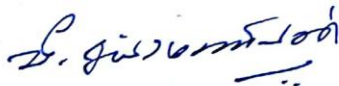
Dt: 14.10.2016

CERTIFICATE

Address of Ethics Committee: National Institute of Siddha, Tambaram Sanatorium, Chennai-600047, Tamil Nadu, India	
Principal Investigator: Dr. P.Parvathy – I year, Dept.of Noi Naadal	
Protocol Title:- A Study on the Symptomatology and Siddha Diagnostic Methodology of Netrisoolai Vatham.	
Documents filed	1) Protocol, 2) Data Collection forms
Clinical trial Protocol (others – Specify)	Yes-(M.D-Dissertation)
Informed consent documents	Yes
Any other documents	-
Date of IEC approval & its number	NIS/IEC/2016/11-25/ 14.10.2016

We approve the trial to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study.



(Dr.V.Subramanian)
Chairman





(Prof.Dr.V.Banumathi)
Member Secretary



The Tamil Nadu Dr. M.G.R. Medical University

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This Certificate is awarded to Dr/Mr/Mrs.....**PARVATHY.P**.....

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Prof. Dr.S.GEETHALAKSHMI, M.D., Ph.D.,
VICE CHANCELLOR



Clinical Trial Details (PDF Generation Date :- Mon, 14 May 2018 04:43:36 GMT)

CTRI Number	CTRI/2017/03/008125 [Registered on: 16/03/2017] - Trial Registered Retrospectively	
Last Modified On	10/03/2017	
Post Graduate Thesis	Yes	
Type of Trial	Observational	
Type of Study	Case Control Study	
Study Design	Other	
Public Title of Study	A Study on Symptoms and Siddha way of diagnosis in Netrisoolai Vatham (Can be compared to Frontal sinusitis like condition in modern medicine)	
Scientific Title of Study	A Study on the Symptamatology and Siddha diagnostic methodology of Netrisoolai Vatham	
Secondary IDs if Any	Secondary ID	Identifier
	nil	NIL
Details of Principal Investigator or overall Trial Coordinator (multi-center study)	Details of Principal Investigator	
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Primary Sponsor	Primary Sponsor Details			
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Details of Secondary Sponsor	Name	Address		
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Countries of Recruitment	List of Countries			
	India			
Sites of Study	Name of Principal Investigator	Name of Site	Site Address	Phone/Fax/Email
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Details of Ethics Committee	Name of Committee	Approval Status	Date of Approval	Is Independent Ethics Committee?
	National Institute of Siddha, Tambaram Sanatorium, Chennai-600047, Tamil Nadu, India	Approved	14/10/2016	No
Regulatory Clearance Status from DCGI	Status		Date	
	Not Applicable		No Date Specified	
Health Condition / Problems Studied	Health Type		Condition	
	Patients		Patients having symptoms of pain in forehead, in between the eyebrows&bridge of the nose, body pain or weariness of the body, throat pain, sleepiness/giddiness/drowsiness/fatigue and head ache.	
Intervention / Comparator Agent	Type	Name	Details	
Inclusion Criteria	Inclusion Criteria			
	Age From	15.00 Year(s)		
	Age To	70.00 Year(s)		
	Gender	Both		
	Details	1) Pain in between the eyebrows,fore head and in bridge of nose 2) Throat pain 3) weariness of the body/body pain 4)sleepiness,giddiness/drowsiness/fatigue		



	5) Head ache - Patients who fulfill three or more criterias will be included in the study.				
Exclusion Criteria	<table border="1"> <thead> <tr> <th colspan="2">Exclusion Criteria</th> </tr> </thead> <tbody> <tr> <td>Details</td><td> 1) Sooriya vartham (One side head ache, Photophobia, Phonophobia) 2) Chandhiraa vartham (Cluster head ache)(One side pain, excessive lacrymation,redness in the affected eye) 3) Other major illness 4) Vulnerable group </td></tr> </tbody> </table>	Exclusion Criteria		Details	1) Sooriya vartham (One side head ache, Photophobia, Phonophobia) 2) Chandhiraa vartham (Cluster head ache)(One side pain, excessive lacrymation,redness in the affected eye) 3) Other major illness 4) Vulnerable group
Exclusion Criteria					
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Method of Generating Random Sequence	Not Applicable				
Method of Concealment	Not Applicable				
Blinding/Masking	Open Label				
Primary Outcome	<table border="1"> <thead> <tr> <th>Outcome</th><th>Timepoints</th></tr> </thead> <tbody> <tr> <td>Establishing the relevance/ correlation of Yugi Chinthamani symptomatology with that of modern concepts of Frontal Sinusitis and its complications.</td><td>One year and six months</td></tr> </tbody> </table>	Outcome	Timepoints	Establishing the relevance/ correlation of Yugi Chinthamani symptomatology with that of modern concepts of Frontal Sinusitis and its complications.	One year and six months
Outcome	Timepoints				
Establishing the relevance/ correlation of Yugi Chinthamani symptomatology with that of modern concepts of Frontal Sinusitis and its complications.	One year and six months				
Secondary Outcome	<table border="1"> <thead> <tr> <th>Outcome</th><th>Timepoints</th></tr> </thead> <tbody> <tr> <td> 1. Arriving at Siddha pathophysiology of Netrisoolai vaatham 2. Finding the line of treatment and dietary regimen for Netrisoolai vaatham. 3. Elucidation of Siddha investigatory parameters of envagai thervu in the diagnosis of the disease Netrisoolai vaatham. </td><td>1 year</td></tr> </tbody> </table>	Outcome	Timepoints	1. Arriving at Siddha pathophysiology of Netrisoolai vaatham 2. Finding the line of treatment and dietary regimen for Netrisoolai vaatham. 3. Elucidation of Siddha investigatory parameters of envagai thervu in the diagnosis of the disease Netrisoolai vaatham.	1 year
Outcome	Timepoints				
1. Arriving at Siddha pathophysiology of Netrisoolai vaatham 2. Finding the line of treatment and dietary regimen for Netrisoolai vaatham. 3. Elucidation of Siddha investigatory parameters of envagai thervu in the diagnosis of the disease Netrisoolai vaatham.	1 year				
Target Sample Size	Total Sample Size=30 Sample Size from India=30				
Phase of Trial	N/A				
Date of First Enrollment (India)	01/03/2017				
Date of First Enrollment (Global)	No Date Specified				
Estimated Duration of Trial	Years=1 Months=6 Days=0				
Recruitment Status of Trial (Global)	Not Applicable				
Recruitment Status of Trial (India)	Open to Recruitment				
Publication Details	None yet				
Brief Summary	<p>In Siddha system of medicine, Sage Yugi classified disease on the basis of symptomatology in his book 'Yugi vaiithiya chinthamani'. He described Netrisoolai vaatham, one among the 80 types of vatha diseases, as a clinical condition characterised by pain in between the eyebrows, forehead and bridge of the nose, throat pain, weariness of the body/ body pain, sleepiness, giddiness/ drowsiness/ fatigue, head ache.</p> <p>The symptoms of Netrisoolai vaatham can be correlated to Frontal sinusitis in modern classification. It is a major health care issue that affects a large proportion of population. If the sinusitis is not treated properly it leads to many complications like orbital cellulitis, osteomyelitis and fistula formation of frontal bone, meningitis and brain abscess.</p> <p>Aim of this study is to validate the Siddha literature as there are very less equivalents to Frontal Sinusitis like conditions mentioned in Siddha system. It is the need of the hour to validate the</p>				



conditions of Netrisoolai vaatham comparison with Frontal Sinusitis mentioned in modern medical literature. This will enable to institute appropriate therapy for condition of Netrisoolai vaatham based on Siddha diagnostic methodologies, which is closely resembles to conditions like Frontal Sinusitis.

X - RAY - PNS

O P No : I 11887, 48/M

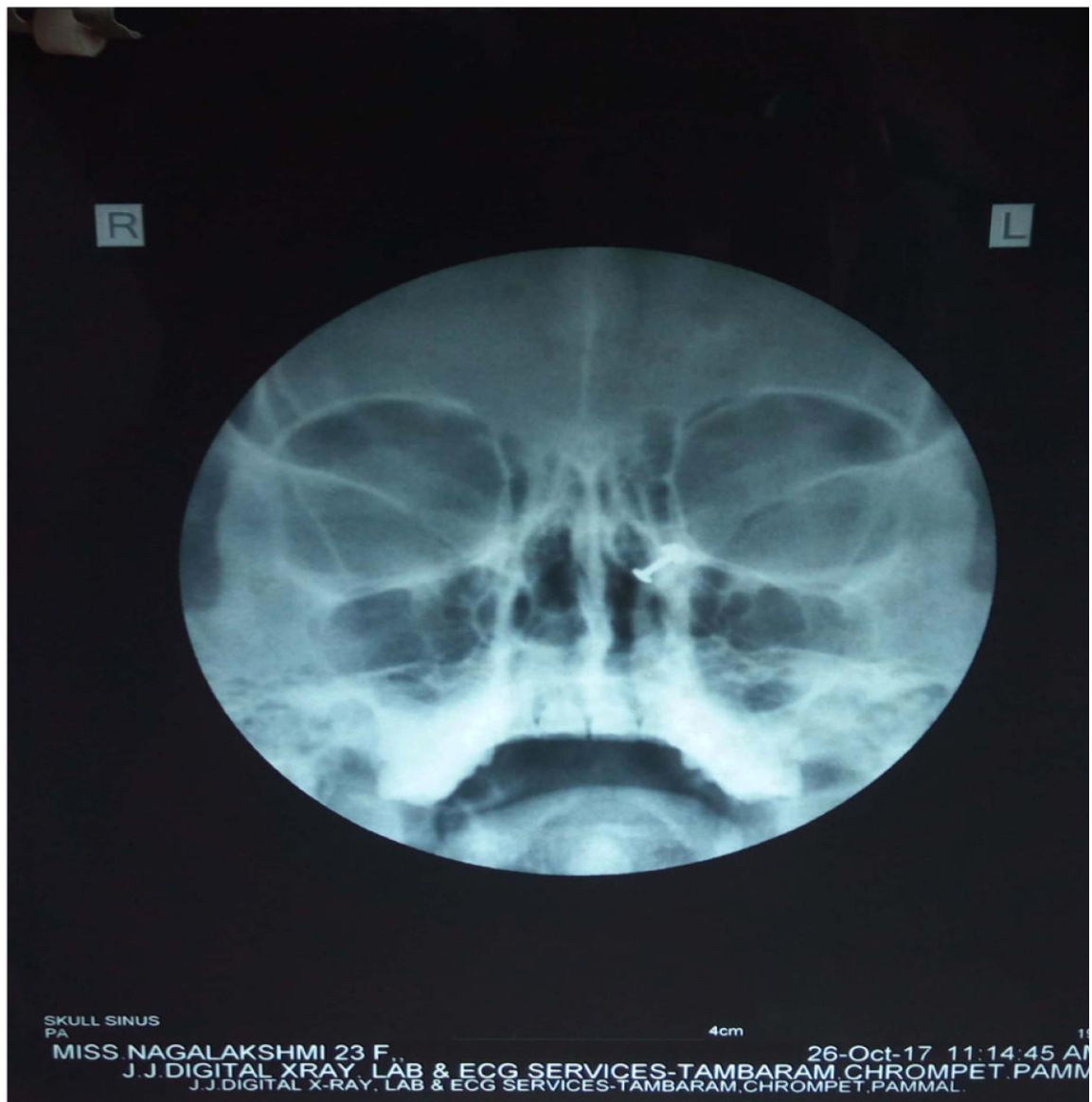


FINDINGS

- A. Nasal septum is slightly deviated towards right
- B. Haziness present in bilateral frontal sinuses and right maxillary sinus

X - RAY - PNS

OP No : K 27603, 24/F



FINDINGS

- A. Septum midline
- B. Hypoplastic frontal sinuses
- C. Visualised maxillary sinuses appear normal



**NATIONAL INSTITUTE OF SIDDHA
AYOTHIDOSS PANDITHAR HOSPITAL**

Tambaram Sanatorium, Chennai - 600 047.

Phone: 044 - 2238 0789

**RADIOLOGY
X - RAY REPORT**

Hospital OPD/IPD No.: JO 9426

Date: 14/12/17 No.:

Name : Nagalakshmi

Age : 23

M/F: ✓

Prof. /Branch / Ward : PNS

- Hypoplastic frontal sinuses.
- Widened maxillary sinuses appear (N).

~~Impression:~~

Dr. V. SWARNAVALI
Asst. Professor (Radiology), Reg. No. 67373
National Institute of Siddha

Signature of Radiologist

**A STUDY ON THE SYMPTOMATOLOGY AND DIAGNOSTIC
METHODOLOGY OF NETRISOOLAI VATHAM**

FORM I - (Screening and Selection Proforma)

1. O.P.No _____ 2. I.P No _____ 3. Bed No: _____ 4. S.No: _____

5. Name: _____ 6. Age (years): 7. Gender: M ☐ F ☐

8. Occupation: _____ 9. Income: _____ T ☐

10. Address: _____

11. Contact Nos: _____

12. E-mail : _____

INCLUSION CRITERIA

Age 15-70 years	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Pain in between the eyebrows	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Throat pain	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>

Weariness of the body/Body pain	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Giddiness/fatigue	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Head ache	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Pain in forehead	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Pain in nose	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>

EXCLUSION CRITERIA

	YES	NO
1) Sooriyaa vartham (migraine)	<input type="checkbox"/>	<input type="checkbox"/>
2) Chandhiraa vartham(Cluster head ache)	<input type="checkbox"/>	<input type="checkbox"/>
3) Other major illness	<input type="checkbox"/>	<input type="checkbox"/>
4) Vulnerable group	<input type="checkbox"/>	<input type="checkbox"/>

Date :

P.G Student

Faculty

**A STUDY ON THE SYMPTOMATOLOGY AND DIAGNOSTIC
METHODOLOGY OF NETRISOOLAI VATHAM
FORM II - (History Proforma)**

1. Sl. No of the case: _____

2. Name: _____ Height: _____ cms Weight: _____ Kg

3. Age (years): _____ DOB

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D D M M Y E A R

4. Educational Status:

1) Illiterate ☐ 2) Literate ☐ 3) Student ☐ 4) Graduate/Postgraduate ☐

5. Nature of work:

1) Sedentary work ☐
2) Field work with physical labour ☐
3) Field work Executive ☐

6. Complaints and Duration:

7. History of present illness:

8. History of Past illness:

	1. Yes	2. No
Systemic hypertension	<input type="checkbox"/>	<input type="checkbox"/>
Ischemic heart disease	<input type="checkbox"/>	<input type="checkbox"/>
Dyslipidemia	<input type="checkbox"/>	<input type="checkbox"/>
Jaundice	<input type="checkbox"/>	<input type="checkbox"/>
Bronchial asthma	<input type="checkbox"/>	<input type="checkbox"/>
Any drug allergy	<input type="checkbox"/>	<input type="checkbox"/>
Any surgeries	<input type="checkbox"/>	<input type="checkbox"/>
Any major illnesses	<input type="checkbox"/>	<input type="checkbox"/>

9. Habits:

	1. Yes	2. No
Smoker	<input type="checkbox"/>	<input type="checkbox"/>
Alcoholic	<input type="checkbox"/>	<input type="checkbox"/>
Drug Addiction	<input type="checkbox"/>	<input type="checkbox"/>
Betel nut chewer:	<input type="checkbox"/>	<input type="checkbox"/>
Tea	<input type="checkbox"/>	<input type="checkbox"/>
Coffee	<input type="checkbox"/>	<input type="checkbox"/>
Milk	<input type="checkbox"/>	<input type="checkbox"/>

DIET HISTORY

Type of diet	V <input type="checkbox"/>	NV <input type="checkbox"/>	M <input type="checkbox"/>
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VEGETARIAN FOODS

	1. Yes	2. No
Sweets	<input type="checkbox"/>	<input type="checkbox"/>
Ice creams	<input type="checkbox"/>	<input type="checkbox"/>
Junk foods	<input type="checkbox"/>	<input type="checkbox"/>

NON VEGETARIAN FOODS

Meat

☐☐

Fish

☐☐

Crab

☐☐

DRINKS

Soft drinks

☐☐

10. Personal history:

Marital status: Married ☐ Unmarried ☐

No. of children: Male: _____ Female: _____

Socio economic status:

11. Family history:

History of Sinusitis --

History of Diabetes mellitus --

History of Hypertension --

History of Obesity --

Others:

6. Menstrual & Obstetric history:

Age at menarche _____ years

Gravidity ☐ Parity ☐

Duration of the menstrual cycle:

Constancy of cycle duration: 1.Regular ☐ 2.Irregular ☐

7. GENERAL ETIOLOGY FOR “NETRISOOLAI VAATHAM”:

	YES	NO
1. Carrying heavy objects in head	<input type="checkbox"/>	<input type="checkbox"/>
2. Over/direct exposure to ultraviolet rays	<input type="checkbox"/>	<input type="checkbox"/>
3. Neglecting oil bath/oil application over scalp	<input type="checkbox"/>	<input type="checkbox"/>
4. Frequent sexual intercourse	<input type="checkbox"/>	<input type="checkbox"/>
5. Trauma of head	<input type="checkbox"/>	<input type="checkbox"/>
6. Entry of flies in to ear or nose	<input type="checkbox"/>	<input type="checkbox"/>
7.Increased intake of drugs like brown sugar, etc	<input type="checkbox"/>	<input type="checkbox"/>

8. CLINICAL SYMPTOMS OF “NETRISOOLAI VAATHAM”:

	YES	NO
Pain in between the eyebrows	<input type="checkbox"/>	<input type="checkbox"/>
Pain in forehead	<input type="checkbox"/>	<input type="checkbox"/>
Pain in the nose	<input type="checkbox"/>	<input type="checkbox"/>
Throat pain	<input type="checkbox"/>	<input type="checkbox"/>
Weariness of the body/Body pain	<input type="checkbox"/>	<input type="checkbox"/>
Giddines/fatigue	<input type="checkbox"/>	<input type="checkbox"/>
Head ache	<input type="checkbox"/>	<input type="checkbox"/>

Date :

P.G Student

Faculty

FORM III - Clinical Assessment

1. Serial No: _____

2. Name: _____

3. Date of birth:

--	--

--	--

--	--	--	--

D D M M Y E A R

4. Age: _____ years

5. Date: _____

6. GENERAL EXAMINATION:

1. Height: _____ cms. BMI _____ (Weight Kg/ Height m²)

2. Weight (kg):

3. Temperature (°F):

4. Pulse rate:

5. Heart rate:

6. Respiratory rate:

7. Blood pressure:

8. Pallor:

9. Jaundice:

10. Cyanosis:

11. Lymphadenopathy:

12. Pedal edema:

13. Clubbing:

14. Jugular vein pulsation:

7. EXAMINATION

1. Inspection

2. Palpation

3. Percussion

4. Auscultation

8. VITAL ORGANS EXAMINATION

	1. Normal	2. Affected
1. Heart _____	<input type="checkbox"/>	<input type="checkbox"/>
2. Lungs _____	<input type="checkbox"/>	<input type="checkbox"/>
3. Brain _____	<input type="checkbox"/>	<input type="checkbox"/>
4. Liver _____	<input type="checkbox"/>	<input type="checkbox"/>

5. Kidney_____ ☐ ☐
6. Spleen_____ ☐ ☐
7. Stomach _____ ☐ ☐

9. SYSTEMIC EXAMINATION:

1. Cardio Vascular System _____
2. Respiratory System _____
3. Gastrointestinal System _____
4. Central Nervous System _____
5. Urogenital System _____
6. Endocrine System _____

[1] ENVAGAI THERVU [EIGHT-FOLD EXAMINATION]

I. NAADI (KAI KURI) (RADIAL PULSE READING)

(a) NaadiNithanam (Pulse Appraisal)

1. Kalam (Pulse reading season)

- | | |
|--------------------------------------------------------------|--------------------------------------------------------------|
| 1. Kaarkaalam
(Rainy season) <input type="checkbox"/> | 2.Koothirkaalam
(Autumn) <input type="checkbox"/> |
| 3. Munpanikaalam
(Early winter) <input type="checkbox"/> | 4.Pinpanikaalam
(Late winter) <input type="checkbox"/> |
| 5. Ilavenirkaalam
(Early summer) <input type="checkbox"/> | 6.Muthuvenirkaalam
(Late summer) <input type="checkbox"/> |

2. Desam (Climate of the patient's habitat)

- | | |
|--------------------------------------------------|---------------------------------------------|
| 1. Kulir <input type="checkbox"/>
(Temperate) | 2. Veppam <input type="checkbox"/>
(Hot) |
|--------------------------------------------------|---------------------------------------------|

3. Vayathu (Age)

- | | | |
|---------------------------------------|----------------------------------------|---------------------------------------|
| 1. 1 - 33yrs <input type="checkbox"/> | 2. 34 - 66yrs <input type="checkbox"/> | 3. 67-100yrs <input type="checkbox"/> |
|---------------------------------------|----------------------------------------|---------------------------------------|

4. UdalVanmai (General body condition)

1. Iyyalbu
(Normal built)

☐

3. Valivu
(Robust)

☐

4. Melivu
(Lean)

☐

5. Vanmai (Expansile Nature)

1. Vanmai

☐

2. Menmai

☐

6. Panbu (Habit)

1. Thannadai
(Playing in)

☐

2. Puranadai
(Playing out)

☐

3. Ilaitthal
(Feeble)

☐

4. Kathithal
(Swelling)

☐

5. Kuthithal
(Jumping)

☐

6. Thullal
(Frisking)

☐

7. Azhutthal
(Ducking)

☐

8. Padutthal
(Lying)

☐

9. Kalatthal
(Blending)

☐

10. Munnokku
(Advancing)

☐

11. Pinnokku
(Flinching)

☐

12. Pakkamnokku
(Swerving)

☐

13. Suzhalal
(Revolving)

☐

(b) Naadinadai (Pulse Play)

1. Vali

☐

2. Azhal

☐

3. Iyyam

☐

4. ValiAzhal

☐

5. AzhalVali

☐

6. IyyaVali

☐

7. ValiIyyam

☐

8. AzhalIyyam

☐

9. IyyaAzhal

☐

II. NAA (TONGUE)

1. Maa Padinithiruthal
(Coatedness)

1. Present

☐

2. Absent

☐

2. Niram
(Colour)

1. Karuppu
(Dark)

☐

2. Manjal
(Yellow)

☐

3. Veluppu
(Pale)

☐

3. Suvai
(Taste sensation)

1. Pulippu
(Sour)

☐

2. Kaippu
(Bitter)

☐

3. Inippu
(Sweet)

☐

4. Vedippu
(Fissure)

1. Absent

☐

2. Present

☐

5. Vaineerooral
(Salivation)

1. Normal

☐

2. Increased

☐

3. Reduced

☐

III. NIRAM (COMPLEXION)

1. Karuppu (Dark) ☐ 2. Manjal (Yellowish) ☐ 3. Veluppu (Fair) ☐

IV. MOZHI (VOICE)

1. Sama oli (Medium pitched) ☐ 2. Urattha oli (High pitched) ☐ 3. Thazhantha oli (Low pitched) ☐

V. VIZHI (EYES)

1. Niram (Venvizhi)
(Discolouration)

1. Karuppu (Dark) ☐ 2. Manjal (Yellow) ☐

3. Sivappu (Red) ☐ 4. Veluppu (White) ☐

5. No Discoloration ☐

2. Kanneer (Tears) 1. Normal ☐ 2. Increased ☐ 3. Reduced ☐

3. Erichchal (Burning sensation) 1. Present ☐ 2. Absent ☐

4. Peelaiseruthal (Mucus excrements) 1. Present ☐ 2. Absent ☐

VI. MEI KURI (PHYSICAL SIGNS)

1. Veppam (Warmth) 1. Mitham (Mild) ☐ 2. Migu (Moderate) ☐ 3. Thatpam (Low) ☐

2. Viyarvai (Sweat) 1. Increased ☐ 2. Normal ☐ 3. Reduced ☐

3. Thoduvali (Tenderness) 1. Absent ☐ 2. Present ☐

VII. MALAM (STOOLS)

1. Niram (Color) 1. Karuppu (Dark) ☐ 2. Manjal (Yellowish) ☐

3. Sivappu (Reddish) ☐ 4. Veluppu (Pale) ☐

2. Sikkal (Constipation)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
3. Sirutthal (Poorly formed stools)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
4. Kalichchal (Loose watery stools)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
5. Seetham (Watery and mucoid excrements)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
6. Vemmai (Warmth)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
7. History of habitual constipation	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
8. Passing of	a) Mucous	1. Yes <input type="checkbox"/>	2. No <input type="checkbox"/>	
	b) Blood	1. Yes <input type="checkbox"/>	2. No <input type="checkbox"/>	

VIII. MOOTHIRAM (URINE)

(a) NEER KURI (PHYSICAL CHARACTERISTICS)

1. Niram (colour)

Niramatrathu (Colourless)	<input type="checkbox"/>	Paalpondraseezh (Milky prulent)	<input type="checkbox"/>	Orange (Orange in colour)	<input type="checkbox"/>
Sivappu (Red)	<input type="checkbox"/>	Pachchai (Greenish)	<input type="checkbox"/>	Adarthiyanaarakku (Dark browm)	<input type="checkbox"/>
Prakasamana Sivappu (Bright red)	<input type="checkbox"/>	Karuppu (Black)	<input type="checkbox"/>	Arakkusivappu/Manjal (Brown red or yellow)	<input type="checkbox"/>

2. Manam (odour)

	Yes		No
Theenattram (Ammonical)	<input type="checkbox"/>	:	<input type="checkbox"/>
Pazhamanam (Fruity)	<input type="checkbox"/>	:	<input type="checkbox"/>
Others	:		

3. Edai (Specific gravity)

	Yes	No
Iyalbu (1.010-1.025) (Normal)	<input type="checkbox"/>	<input type="checkbox"/>
Migathadithuirangal (>1.025) (High Specific gravity)	<input type="checkbox"/>	<input type="checkbox"/>
Laesathuvamgairangal (<1.010) (Low Specific gravity)	<input type="checkbox"/>	<input type="checkbox"/>
Laesathuvam & Seeragairangal (1.010-1.012) (Low and fixed Specific gravity)	<input type="checkbox"/>	<input type="checkbox"/>

4. Alavu(volume)

	Yes	No
Iyalbu (1.2-1.5 lt/day) (Normal)	<input type="checkbox"/>	<input type="checkbox"/>
Athineer (>2lt/day) (Polyuria)	<input type="checkbox"/>	<input type="checkbox"/>
Kuraineer (<500ml/day) (Oliguria)	<input type="checkbox"/>	<input type="checkbox"/>

5. Nurai(froth)

	Yes	No
Niramatrathu (Clear)	<input type="checkbox"/>	<input type="checkbox"/>
Kalanganathanu (Cloudy)	<input type="checkbox"/>	<input type="checkbox"/>

6. Enjal (deposits)

	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>

(b) NEI KURI (oil spreading sign)

1. Aravam (Serpentine fashion)	<input type="checkbox"/>	2. Aazhi (Ring)	<input type="checkbox"/>
3. Muthu (Pearl beaded appear)	<input type="checkbox"/>	4. AravilMothiram (Serpentine in ring fashion)	<input type="checkbox"/>
5. AravilMuthu (Serpentine and Pearl patterns)	<input type="checkbox"/>	6. MothirathilMuthu (Ring in pearl fashion)	<input type="checkbox"/>
7. MothirathilAravam (Ring in Serpentine fashion)	<input type="checkbox"/>	8. MuthilAravam (Pearl in Serpentine fashion)	<input type="checkbox"/>
9. MuthilMothiram (Pearl in ring fashion)	<input type="checkbox"/>	10. Asathiyam (Incurable)	<input type="checkbox"/>
11. Mellenaparaval (Slow spreading)	<input type="checkbox"/>		

12. others:

[2]. **MANIKADAI NOOL** (Wrist circummetric sign) : _____ fbs

[3]. **IYMPORIGAL /IYMPULANGAL**
(Penta sensors and its modalities)

	1. Normal	2. Affected
1. Sevi (Ears)	<input type="checkbox"/>	<input type="checkbox"/>
2. Mei (Skin)	<input type="checkbox"/>	<input type="checkbox"/>
3. Kan (Eyes)	<input type="checkbox"/>	<input type="checkbox"/>
4. Nakku(Mouth/ Tongue)	<input type="checkbox"/>	<input type="checkbox"/>
5. Mookku (Nose)	<input type="checkbox"/>	<input type="checkbox"/>

[4]. **KANMENTHIRIYANGAL /KANMAVIDAYANGAL**
(Motor machinery and its execution)

	1. Normal	2. Affected
1. Vaai (Mouth)	<input type="checkbox"/>	<input type="checkbox"/>
2. Kaal (Legs)	<input type="checkbox"/>	<input type="checkbox"/>
3. Kai (Hands)	<input type="checkbox"/>	<input type="checkbox"/>
4. Eruvai (Analepy)	<input type="checkbox"/>	<input type="checkbox"/>
5. Karuvaai (Birth canal)	<input type="checkbox"/>	<input type="checkbox"/>

[5] **GUNAM**

1. SathuvaGunam	<input type="checkbox"/>	2. RajoGunam	<input type="checkbox"/>
3. ThamoGunam	<input type="checkbox"/>		

[6]. YAKKAI (SOMATIC TYPES)

Vatha constitution	Pitha constitution	Kaba constitution
Lean and lanky built <input type="checkbox"/>	Thin covering of bones and joints by soft tissue <input type="checkbox"/>	Plumpy joints and limbs <input type="checkbox"/>
Hefty proximities of limbs <input type="checkbox"/>		Broad forehead and chest <input type="checkbox"/>
Cracking sound of joints on walking <input type="checkbox"/>	Always found with warmth, sweating and offensive body odour <input type="checkbox"/>	Sparkling eyes with clear sight <input type="checkbox"/>
Dark and thicker eye lashes <input type="checkbox"/>	Wrinkles in the skin <input type="checkbox"/>	Lolling walk <input type="checkbox"/>
Dark and light admixed complexion <input type="checkbox"/>	Red and yellow admixed complexion <input type="checkbox"/>	Immense strength despite poor eating <input type="checkbox"/>
Split hair <input type="checkbox"/>	Easily suffusing eyes due to heat and alcohol <input type="checkbox"/>	High tolerance to hunger, thirst and fear <input type="checkbox"/>
Clear words <input type="checkbox"/>	Sparse hair with greying <input type="checkbox"/>	Exemplary character with good memory power <input type="checkbox"/>
Scant appetite for cold food items <input type="checkbox"/>	Intolerance to hunger, thirst and heat <input type="checkbox"/>	More liking for sweet taste <input type="checkbox"/>
Poor strength despite much eating <input type="checkbox"/>	Inclination towards perfumes like sandal <input type="checkbox"/>	Husky voice <input type="checkbox"/>
Loss of libido <input type="checkbox"/>	Slender eye lashes <input type="checkbox"/>	
In generosity <input type="checkbox"/>	Pimples and moles are plenty <input type="checkbox"/>	
Sleeping with eyes half closed <input type="checkbox"/>		

RESULTANT SOMATIC TYPE: _____

[7] UYIR THATHUKKAL

A. VALI

	1. Normal	2. Affected
1. Praanan (Heart centre)	<input type="checkbox"/>	<input type="checkbox"/>
2. Abaanan (Matedial of muladharcentre)	<input type="checkbox"/>	<input type="checkbox"/>
3. Viyaanan (Throat centre)	<input type="checkbox"/>	<input type="checkbox"/>
4. Udhaanan (Forehead centre)	<input type="checkbox"/>	<input type="checkbox"/>
5. Samaanan (Navel centre)	<input type="checkbox"/>	<input type="checkbox"/>
6. Naahan (Higher intellectual function)	<input type="checkbox"/>	<input type="checkbox"/>
7. Koorman (Air of yawning)	<input type="checkbox"/>	<input type="checkbox"/>
8. Kirukaran (Air of salivation)	<input type="checkbox"/>	<input type="checkbox"/>
9. Devathathan (Air of laziness)	<input type="checkbox"/>	<input type="checkbox"/>
10. Dhananjeyan (Air that acts on death)	<input type="checkbox"/>	<input type="checkbox"/>

B. AZHAL

	1. Normal	2. Affected
1. Analapittham (Gastric juice)	<input type="checkbox"/>	<input type="checkbox"/>
2. Ranjaka pittham (Haemoglobin)	<input type="checkbox"/>	<input type="checkbox"/>

- | | | |
|-----------------------------------------|--------------------------|--------------------------|
| 3.Saathaka pittham
(Life energy) | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.Prasaka pittham
(Bile) | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Aalosaka pittham
(Aqueous Humour) | <input type="checkbox"/> | <input type="checkbox"/> |

C. IYYAM

- | | 1. Normal | 2. Affected |
|---------------------------------------|--------------------------|--------------------------|
| 1. Avalambagam
(Serum) | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Kilethagam
(saliva) | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Pothagam
(lymph) | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Tharpagam
(cerebrospinal fluid) | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Santhigam
(Synovial fluid) | <input type="checkbox"/> | <input type="checkbox"/> |

[8] UDAL THATHUKKAL

INCREASED SAARAM (CHYLE)		DECREASED SAARAM(CHYLE)	
Loss of appetite	<input type="checkbox"/>	Loss weight	<input type="checkbox"/>
Excessive salivation	<input type="checkbox"/>	Tiredness	<input type="checkbox"/>
Loss of perseverance	<input type="checkbox"/>	Dryness of the skin	<input type="checkbox"/>
Excessive heaviness White musculature	<input type="checkbox"/>	Diminished activity of the sense organs	<input type="checkbox"/>
Cough, dysponea, excessive sleep	<input type="checkbox"/>		
Weakness in all joints of the body	<input type="checkbox"/>		

A. SAARAM: INCREASED ☐ DECREASED ☐

INCREASED CENNEER(BLOOD)	DECREASED CENNEER(BLOOD)
Boils in different parts of the body <input type="checkbox"/>	Anemia <input type="checkbox"/>
Anorexia <input type="checkbox"/>	Tiredness <input type="checkbox"/>
Mental disorder <input type="checkbox"/>	Neuritis <input type="checkbox"/>
Splenomegaly <input type="checkbox"/>	Lassitude <input type="checkbox"/>
Colic pain <input type="checkbox"/>	Pallor of the body <input type="checkbox"/>
Increased pressure <input type="checkbox"/>	
Reddish eye and skin <input type="checkbox"/>	
Jaundice <input type="checkbox"/>	
Haematuria <input type="checkbox"/>	

B. CENNEER: INCREASED ☐ DECREASED ☐

INCREASED OON (MUSLE)	DECREASED OON (MUSLE)
Cervical lymphadenitis <input type="checkbox"/>	Impairment of sense organs <input type="checkbox"/>
Vernical ulcer <input type="checkbox"/>	Joint pain <input type="checkbox"/>
Tumour in face ,abdomen, thigh, genitalia <input type="checkbox"/>	Jaw, thigh and genitalia gets shortened <input type="checkbox"/>
Hyper muscular in the cervical region <input type="checkbox"/>	

C. OON: INCREASED ☐ DECREASED ☐

INCREASED KOZHUPPU (ADIPOSE TISSUE)	DECREASED KOZHUPPU (ADIPOSE TISSUE)
Cervical lymph adenitis <input type="checkbox"/>	Pain in the hip region <input type="checkbox"/>
Vernical ulcer <input type="checkbox"/>	Disease of the spleen <input type="checkbox"/>
Tumour in face, abdomen, thigh, genitalia <input type="checkbox"/>	
Hyper muscular in the cervical region <input type="checkbox"/>	
Dyspnoea <input type="checkbox"/>	
Loss of activity <input type="checkbox"/>	

D. KOZHUPPU: INCREASED ☐ DECREASED ☐

INCREASED ENBU (BONE)	DECREASED ENBU (BONE)
Growth in bones and teeth <input type="checkbox"/>	Bones diseases <input type="checkbox"/>
	Loosening of teeth <input type="checkbox"/>
	Nails splitting <input type="checkbox"/>
	Falling of hair <input type="checkbox"/>

E. ENBU: INCREASED ☐ DECREASED ☐

INCREASED MOOLAI (BONE MARROW)	DECREASED MOOLAI (BONE MARROW)
Heaviness of the body <input type="checkbox"/>	Osteoporosis <input type="checkbox"/>
Swollen eyes <input type="checkbox"/>	Sunken eyes <input type="checkbox"/>
Swollen phalanges chubby fingers <input type="checkbox"/>	
Oliguria <input type="checkbox"/>	
Non healing ulcer <input type="checkbox"/>	

F. MOOLAI: INCREASED ☐ DECREASED ☐

INCREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)	DECREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)
Infatuation and lust towards women / men <input type="checkbox"/>	Failure in reproduction <input type="checkbox"/>
Urinary calculi <input type="checkbox"/>	Pain in the genitalia <input type="checkbox"/>

G. SUKKILAM/SURONITHAM: INCREASED ☐ DECREASED ☐

[9] MUKKUTRA MIGU GUNAM

I. Vali Migu Gunam

1. Present

2. Absent

- | | | |
|----------------------------|--------------------------|--------------------------|
| 1. Emaciation | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Complexion – blackish | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Desire to take hot food | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Shivering of body | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Abdominal distension | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Constipation | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Insomnia | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Weakness | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Defect of sense organs | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Giddiness | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Lack of interest | <input type="checkbox"/> | <input type="checkbox"/> |

II. Pitham Migu Gunam

1. Present

2. Absent

- | | | |
|----------------------------------------|--------------------------|--------------------------|
| 1. Yellowish discolouration of skin | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Yellowish discolouration of the eye | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Yellow coloured urine | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Yellowishness of faeces | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Increased appetite | <input type="checkbox"/> | <input type="checkbox"/> |

- | | | |
|------------------------------------|--------------------------|--------------------------|
| 6. Increased thirst | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Burning sensation over the body | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Sleep disturbance | <input type="checkbox"/> | <input type="checkbox"/> |

III. Kapham migu gunam

1. Present

2. Absent

- | | | |
|----------------------------------|--------------------------|--------------------------|
| 1. Increased salivary secretion | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Reduced activeness | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Heaviness of the body | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Body colour – fair complexion | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Chillness of the body | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Reduced appetite | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Eraippu | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Increased sleep | <input type="checkbox"/> | <input type="checkbox"/> |

[10]. NOIUTRA KALAM

- | | | | |
|-------------------------------------|--------------------------|--------------------------------------|--------------------------|
| 1. Kaarkaalam
(Aug15-Oct14) | <input type="checkbox"/> | 2.Koothirkaalam
(Oct15-Dec14) | <input type="checkbox"/> |
| 3. Munpanikaalam
(Dec15-Feb14) | <input type="checkbox"/> | 4.Pinpanikaalam
(Feb15-Apr14) | <input type="checkbox"/> |
| 5. Ilavenirkaalam
(Apr15-June14) | <input type="checkbox"/> | 6.Muthuvenirkaalam
(June15-Aug14) | <input type="checkbox"/> |

[11]. NOI UTRA NILAM

- | | | | | | |
|-------------------------------|--------------------------|-----------------------------|--------------------------|-------------------------|--------------------------|
| 1. Kurunji
(Hilly terrain) | <input type="checkbox"/> | 2. Mullai
(Forest range) | <input type="checkbox"/> | 3. Marutham
(Plains) | <input type="checkbox"/> |
| 4. Neithal
(Coastal belt) | <input type="checkbox"/> | 5. Paalai
(Desert) | <input type="checkbox"/> | | |

[12].Date of Birth

[13]. Time of Birth AM PM

[14]. Place of Birth: _____

Date :

P.G Student

Faculty

FORM-IV - (Laboratory Investigations)

1. O.P No: _____ Lab.No _____ Serial No _____

2. Name: _____

3. Date of birth:

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--	--	--	--

D D M M Y E A R

4. Age: _____ years

5. Date of assessment: _____

BLOOD

1. TC _____ Cells/cu mm

2. DC
P _____% L _____% E _____% M _____% B _____%

3. Hb _____ gms%

4. ESR at 30 minutes _____ mm at 60 minutes _____ mm

5. Blood Sugar (F) _____ mgs%

6. Blood Sugar (PP) _____ mg%

7. Serum Cholesterol _____ mgs %

8. HDL _____ mgs%

9. LDL _____ mgs%

10. Triglycerides _____ mgs%

11. Blood Urea _____ mgs%

12. Serum Creatinine _____ mgs%

URINE

1. Neerkuri _____

2. Neikuri _____

3. Sugar (F) _____

4. Sugar (PP) _____

5. Albumin _____

6. Deposits _____

SPECIFIC INVESTIGATION

1) X-ray PNS :

2) Absolute Eosinophil Count :

Date:

P.G Student

Faculty

FORM V - INFORMED WRITTEN CONSENT FORM

I exercising my free power of choice, hereby give my consent to be included as a subject in the diagnostic trial entitled “ A study on “NETRISOOLAI VATHAM”. I may be asked to give urine and blood samples during the study.

I have been informed about the study to my satisfaction by the attending investigator about the purpose of this trial, the nature of study and the laboratory investigations. I also give my consent to publish my study results in scientific conferences and reputed scientific journals for the betterment of clinical research.

The photographs taken in the study will be displayed only in scientific conference for the advancement of medical knowledge.

Signature /thumb impression of the patient :

Date :

Name of the patient :

Signature of the investigator :

Date :

Head of the Department :

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை-47.

நோய் நாடல் துறை

“நெற்றிசூலை வாதம் கணிப்பு முறை மற்றும் குறிகுணங்களை பற்றிய ஓர் ஆய்வு”

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் - ந்த ஆய்வை குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி :

கையொப்பம் :

- டம்:

பெயர் :

நோயாளியின் ஒப்புதல்

நான், _____ என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு - ந்கு தலைப்பிடப்பட்ட “நெற்றிசூலை வாதம் “ நோயை கணிப்பதற்கான மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

என்னிடம் - ந்தமருத்துவ ஆய்வின் காரணத்தையும், மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

இந்த ஆய்வின் போது எடுக்கப்படும் புகைபடங்கள் மருத்துவ அறிவியலின் முன்னேற்றத்திற்காக மட்டும் பயன்படுத்தப்படும்.

தேதி:

- டம்:

கையொப்பம் :

பெயர் :

தேதி :

சாட்சிக்காரர் கையொப்பம் :

- டம்:

பெயர் :

உறவுமுறை :

FORM IV - PATIENT INFORMATION SHEET

PURPOSE OF RESEARCH AND BENEFITS:

The diagnostic research study in which your participation is proposed to assess the diagnostic methods in Siddha methodology in NETRISOOLAI VAATHAM patients. Knowledge gained from this study would be of benefit to patients suffering from such conditions for the diagnosis and prognosis.

STUDY PROCEDURE:

You will be interviewed and examined as OP and IP patients at the study centre. At the first visit the physician will conduct a brief physical examination and assess the condition followed by Envagai thervu and routine blood and urine analysis. After matching the inclusion criteria you will be included in this study and you will be examined on the basis of Envagai thervu.

POSSIBLE RISK:

During this study there may be a minimum pain to you while drawing blood sample.

CONFIDENTIALITY:

Your medical records will be treated with confidentiality and will be revealed only to other doctors / scientists. The results of this study may be published in a scientific journal, but you will not be identified by your name.

YOUR PARTICIPATION AND YOUR RIGHTS:

Your participation in this study is voluntary and you may be withdrawn from this study anytime without having to give reasons for the same. You will be informed about the findings that occur during the study. If you do agree to take part in this study, your health record will need to be made available to the investigators. If you don't wish to participate at any stage, the level of care you receive will in no way be affected. The Ethics committee cleared the study (IEC No.NIS/IEC/2016/11-25/ 14.10.2016) for undertaking at OPD and IPD, NIS. Should any question arise with regards to this study you contact following person.

P.G student:

Dr. P.Parvathy 3rd Year
Department of Noi Naadal
National Institute of Siddha
Chennai-600 047.

நெற்றிகுலை வாதம் நோய் கணிப்பு முறை மற்றும் குறிகுணங்களை பற்றிய ஓர் ஆய்வு”

நோயாளியின் தகவல் படிவம்

ஆய்வின் நோக்கமும் பயனும்:

தாங்கள் பங்கேற்கும் - வ்வாய்வு “நெற்றிகுலை வாதம் நோய் கணிப்பு முறை மற்றும் குறிகுணங்களை பற்றிய ஓர் ஆய்வு” சித்த மருத்துவ முறையில் நோயை கணிப்பதற்கான ஓர் ஆய்வுமுறை. - வ்வாய்வு தங்களின் நோய்கணிப்பை பற்றியும் நோயின் போக்கை பற்றியும் அறிய உதவும்.

ஆய்வு முறை:

தாங்கள் நோக்காணல் மற்றும் பரிசோதனைகளின் மூலம் உள்நோயாளி, வெளிநோயாளி பிரிவில் ஆய்வு செய்யப்படுவீர்கள். முதல் நோக்காணலின்போது ஆய்வாளரால் உடல் பரிசோதனை, நீர், - ரத்தம், மற்றும் மலம் பரிசோதனை செய்து குறிப்பிட்ட குறிகுணங்கள் - ருக்கின்றனவா என ஆய்விற்கு உட்படுத்தப்படுவீர்கள்.

நேரும் உபாதைகள்:

- வ்வாய்வில் - ரத்த பரிசோதனைக்காக - ரத்தம் எடுக்கும்போது சிறிதளவு வலி ஏற்படலாம்.

மந்தணம்:

தங்களின் மருத்துவ ஆவணங்கள் அனைத்தும் மருத்துவர், ஆய்வாளர் அல்லாத பிறரிடம் தெரிவிக்கப்படமாட்டாது.

நோயாளியின் பங்களிப்பும் உரிமைகளும்:

- வ்வாய்வில் தங்களின் பங்கேற்பு தன்னிச்சையானது. - வ்வாய்வில் தாங்கள் ஒத்துழைக்க - யலவில்லையெனில் எப்பொழுது வேண்டுமானாலும் காரணம் எதுவும் கூறாமல் விலகிக் கொள்ளலாம். - வ்வாய்வின்போது அறியப்படும் தகவல்கள் தங்களுக்கு தெரிவிக்கப்படும். நோயாளியின் ஒப்புதலுக்கிணங்க நோய்கணிப்பு விவரங்களை ஆய்வாளர் பயன்படுத்திக் கொள்வார். நோயாளி ஆய்வினிடையே ஒத்துழைக்க மறுத்தாலும் எந்த நிலையிலும் நோயாளியை கவனிக்கும் விதம் பாதிக்கப்பட மாட்டாது. நிறுவன நெறிமுறை குழுமம் (Institutional Ethical Committee No. NIS/IEC/2016/11-25/ 14.10.2016) மேற்கண்ட ஆய்வினை மேற்கொள்ள ஒப்புதல் அளித்துள்ளது. ஆய்வு குறித்த சந்தேகங்கள் - ருப்பின் கீழ்க்கண்ட நபரை தொடர்பு கொள்ளவும்.

பட்டமேற்படிப்பாளர் :

மரு. ப. பார்வதி

நோய் நாடல் துறை

தேசிய சித்த மருத்துவ நிறுவனம்,

சென்னை-47.